M/S EVERWELL CABLE AND ENGINEERING COMPANY LTD

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ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED ELECTRICAL CABLES AND CONCRETE ELECTRICAL POLES MANUFACTURING FACTORY AT DUNDANI VILLAGE, MKURANGA WARD, MKURANGA DISTRICT IN COAST REGION

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31st October, 2016

EXECUTIVE SUMMARY

Project Description

M/s Everwell Electrical Cable and Engineering Company Ltd is a private company incorporated in the United Republic of Tanzania under the Companies Act of 2002. The Company was incorporated on the 30th July, 2015, and bears the Certificate of Incorporation number 119188. The company is also registered by Tanzania Revenue Authority and given a Tax Identification Number 127-682-879 issued on 10 August 2015.

The company intends to be dealing with manufacturing of electrical cables of various types and sizes. Further, the company envisages manufacturing of concrete electrical poles for overhead transmission of electricity. Given their related nature, all products will be manufactured within the same premises.

To undertake the proposed project, M/s Everwell Cable and Engineering Company Ltd rented three completed warehouses from Starways Group Limited. The rented warehouses in which the developer intends to use are located within a well built up industrial plots No.4,5,6,7,8,9,10,11 and 12 owned by the Lessor i.e. Starways Group Ltd. Construction at the said plots was undertaken between 2014 and 2015. In this regard, establishment of cables and concrete electrical poles manufacturing factory shall not involve construction phase but rather installation of machines in the warehouses ready for operation phase.

In the production of concrete electrical poles and cables of different sizes, the project will need a variety of raw materials. For concrete electrical poles, raw materials will include: Cement (195Tons per month), Sand (260Tons per month), reinforcing Steel Bars (45tons), Water (60,000L). For electrical cables raw materials will include: Round copper wire(2200T), Round aluminium rods (385T), Alkali free glass fibre ribbon (40T), Polyester film for electrical insulation (270T), Galvanized steel core wires (250T), Galvanized low carbon steel wire for armoured cable(750T), Steel strip for armoured cable(900T), Cable shielding strip(12T), Cross linked polyethylene cable insulation material (200T).

The factory will have capacity to manufacture 1500 pieces of concrete electrical poles per month. The labor force of 60 people both skilled and unskilled will be employed. The life span of the project is expected to be 30 years.

Description of the Environment

The project site is located at within premises owned by the Lessor i.e. Starways Group Ltd. The proposed factory will be located within a well built up area and fenced premises of the large area covering 79,689 square meters or approximately 20 acres. The whole

area is comprised of 6 warehouses, office building, canteen building, toilets, parking lot, gate house and the power house. There is also a large part of land within the premises which is not yet utilized and comprised of natural vegetation. Out of all buildings on site, 3 warehouses are rented by M/s Everwell Cable and Engineering Company Limited for establishment of the proposed electrical cables and concrete electrical poles manufacturing factory.

Stakeholder Engagement

Stakeholder consultations were carried out accordingly, its selection was based on the role and relevance of an organization, group or individuals who may affect or be affected by the proposed factory. Interviews and meetings with officials from Government departments and District Council staff were held. Residents around the factory, Ward and village leaders were also consulted. One-to-one interviews with a list of general topics or questions and partly based on an open discussion as well as focused group discussions were also used to gather information.

The consultation revealed that in general local stakeholders welcome the project as it will create employment and bring with it economic development in the area. Stakeholders' opinions were recorded concerning the project's principal perceived beneficial and negative effects, as follow:

Negative impacts

Generation of Wastes

Stakeholder consulted were of the view that during operation phase the proposed development will produce different solid wastes such as broken electrical poles, packaging wastes, pieces of wire, metal, used papers and domestic wastes whereby if not properly disposed will pollute the environment. Apart from solid wastes, the stakeholders explained that during rain seasons there is likelihood of rainwater flowing toward the project area and to neighbour's farms. Also domestic wastewater will be generated during all phases of the project and need proper wastewater management systems at the site.

Risk of Fire Eruptions

Stakeholders were of the view that since the proposed industry will be dealing with electricity in all its production activities. They advised that workers should be well trained on how to operate the machines. In addition, they insisted on the availability of fire fighting equipment at the factory due to the nature of running machines which use electricity.

Positive Impacts

Enhanced income, employment opportunities and local business

It is anticipated that the proposed project has great potential to improving availability of electrical equipment in the country. This is likely to boost other investments, provide employment opportunities and spur local business.

Parties consulted:

- Village Leaders
- Ward leaders
- Mkuranga District Council
- Occupational Safety and Health Authority
- Ministry of Industry, Trade and Investment
- Neighbours around the proposed project area

Results of Public Consultation

From the interviews it was found out that a good number of stakeholders interviewed were aware of existing factory premises but didn't know plans to implement the new project within the same factory premises. Stakeholders at the village, ward and district level welcome the project although they complained about other investors that they do not have good cooperation with local communities and to the government officers. They insist on good cooperation between the developers and the community.

Organisations involved in the EIA

Project Developer: M/s Everwell Cable and Engineering Company Ltd

EIA Consultant: Assess Consulting Co Ltd

Mitigation of Impacts

The following measures will be taken by the developer to minimize identified negative impacts:

Injuries and other Occupational hazards

Mitigation measures are:

- Provide and enforce use of protective gears
- Provide regular training to all staff on safety matters especially new employees.
- Report occurrence of accident to OSHA within 24 hours after accidents
- Provide First Aid facilities and train some workforce on emergency response measures.
- Provide regular medical check-ups for workers.
- Establish health and safety regulations, and formulating preventive measures for accidents and other human health and safety hazards.

Environmenta degradation from dust and emissions

Mitigation measures include:

- Install emission control equipment including wet scrubber and bag house to control emissions
- Install and maintain high rise smoke stack not less than 125 feet

Environmental Pollution due to lquid waste mismanagement

Mitigation measures include:

- Ensure proper recycling of water whenever possible
- Carrying out regular maintenance of drainage systems

Environmental pollution due to solid waste mismanagement

Mitigation measures include:

- Proper and timely collection and disposal of solid wastes from domestic points
- Avoiding unwanted recyclable material from entering the factory
- Separation of solid wastes at source

Noise and vibration from industrial operations

Mitigation of this impact include

- proper maintenance of noise emitting equipment

Environmental and Social Management Plan

The EIS presents an outline Environmental and Social Management Plan (ESMP) for the whole factory. Much of the day to day responsibility for implementing M/s Everwell Cable and Engineering Company Ltd environmental and social policy will be closely supervised by the company Environmental Control Officer.

Monitoring Plan

The EIS presents an outline Environmental Monitoring Plan (EMP) for the factory. This will assist M/s Everwell and other relevant stakeholders to monitor the following:

(1) Implementation of the proposed mitigation measures and

(2) The efficacy of the proposed mitigation measure.

Cost Benefit Analysis

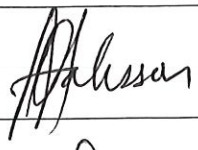
The EIS presents an assessment of the project in terms of negative impacts, compared to the socio-economic benefits that will not happen if the project is not implemented. Environmental cost benefit analysis is assessed in terms of the negative versus positive impacts. The potential benefits of the project, in terms of financial and social benefit are substantial. Similarly, the environmental impacts can be reasonably mitigated and the financial resources needed to mitigate negative impacts, when compared to the required investment, are relatively small. The EIS has demonstrated that the benefits outweigh the costs.

Decommissioning

A preliminary decommissioning plan has been developed. It is envisaged that the project removal will begin six months after closure and continue for six months afterwards. Within the first six months M/s Everwell Ltd will take inventory of all components that need to be removed and or disposed of. This inventory will include building structures to be demolished, machinery to be disposed of, debtors and creditors to be settled. Also, mode of disposal and identification of actual contractors for demolition will be finalized within this period. The information in the preliminary decommissioning plan will assist in the preparation of the final decommissioning plan to be approved by NEMC.

DECLARATION

We, hereby certify that the particulars given in this report are correct and true to the best of our knowledge

Name of Consultant	Position/Area of Expertise	Signature
Mr Ojung Longdare	Registered Environmental Impact Assessment Expert	
Mr. Salvatory John	Registered Environmental Impact Assessment Expert	

ACKNOWLEDGEMENT

The developer wishes to acknowledge the following for their invaluable contribution to the success of this ESIA study:

- The National Environmental Management Council for reviewing project brief and the scoping report. This has enabled the consultant to address all pertinent issues that would have been forgotten.
- All stakeholders as listed in Appendix 2 are also acknowledged for their invaluable comments, information and data.

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ACRONYMS

CBD	Convention on Biological Diversity
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMA	Environmental Management Act
EMP	Environmental Monitoring Plan
ESMP	Environmental and Social Management Plan
EWURA	Energy and Water Utilities Regulatory Agency
GN	Government Notice
HIV/AIDS	Human Immune Virus/Acquired Immune Deficiency Virus
ILO	International Labour Organization
VEO	Village Executive Officer
NEMC	National Environment Management Council
NEP	National Environmental Policy
NGO	Non-Governmental Organization
NLUPC	National Land Use Planning Commission
NWSDS	National Water Sector Development Strategy
OSHA	Occupational Safety and Health Authority
STIs	Sexually Transmitted Infections
TAC	Technical Advisory Committee
TANESCO	Tanzania Electricity Supply Company
TBS	Tanzania Bureau of Standards

ToR	Terms of Reference
TTCL	Tanzania Telecommunication Company Ltd
WEO	Ward Executive Officer

CHAPTER ONE: INTRODUCTION

1.1 GENERAL BACKGROUND

M/s Everwell Cable and Engineering Company Ltd is a private company registered in the United Republic of Tanzania under the Companies Act of 2002. The Company was incorporated on the 30th July, 2015, and bears the Certificate of Incorporation number 119188. The company is also registered by Tanzania Revenue Authority and given a Tax Identification Number (TIN) 127-682-879 issued on 10 August 2015.

The company will be dealing with manufacturing of electrical cables of various types and sizes. Furthermore, the company envisages manufacturing of concrete electrical poles for overhead transmission of electricity.

The company's vision is to be one of the leading manufacturers of high quality electrical equipment in Tanzania while its mission is to capture the local as well as the East African markets in supplying electrical equipment. The market analysis undertaken for the project has established that demand for electrical cables is great while supply from within the country is inexistent as many electrical items are sourced from abroad. Apart from meeting increasing demand of electrical items in the domestic market, the proposed project has a number of other benefits.

The Company has rented three completed warehouses from Starways Group Limited to be used for establishment of the proposed cables and poles manufacturing factory. The rented warehouses in which Everwell Cable and Engineering Company intend to use are located within a well built up industrial plots No.4,5,6,7,8,9,10,11 and 12 owned by the Lessor i.e. Starways Group Ltd. Construction of existing warehouses was done in between 2014 and 2015. In this regard, establishment of cables and concrete electrical poles manufacturing factory shall not involve construction phase but only installation of machines in the warehouses ready for operation phase.

In line with the Environmental Management Act, Number 20 of 2004 and the Environmental Impact Assessment and Audit Regulations, GN Number 349 of 2005, the proponent was advised to register a project proposal for screening of its potential environmental effects. The project was then screened with regard to the following attributes:

- Location and scale of project
- Technology to be used
- Land use considerations
- Environmental impacts
- Any factors relevant to the particular project.

After screening, the project proponent was required to undertake a full EIA study. As per Environment Impact Assessment and Audit Regulations, 2005 Gn No.349 of 2005, scoping was done in order to develop the Terms of Reference (ToR) for the EIA study. In this regard the proponent entered into contract with Assess Consulting Co. Ltd of Dar es Salaam to carry out the EIA study. The starting point was for the consultant to prepare the project brief followed by undertaking a scoping exercise and prepare the ToR for NEMC's approval prior to the actual impact assessment.

1.2 SCOPING

Scoping was conducted between the 9th of September 2016 to 27th of September 2016 and involved field visits, consultations with stakeholders and analysis of issues through desk studies. In line with the national Environmental Impact Assessment & Audit Regulations, G.N. No. 349 of 2005, the scoping report identified key environmental and social issues and concerns of stakeholders requiring special attention during the EIA study. The outcomes of the scoping exercise were used to develop the ToR for the EIA which were approved by NEMC.

Project stakeholders include national authorities, relevant Departments/Agencies such as Occupational Safety and Health Authority (OSHA) and Ministry of Industry, Trade and Investment. All these stakeholders were pre-determined based on the nature of the project, while others such as district, ward, village leaders and interested groups along the proposed project site and area of influence unfolded as consultations went along. List of stakeholders is appended as appendix 3.

The following key Issues were identified during scoping and given attention during EIA study.

- Occupational health hazard and safety risks to factory workers
- Enhanced income, employment opportunities and local business
- Generation of Solid Waste and its management
- Impairment of environment due to discharge of domestic effluent
- Noise and vibration due to factory operations
- Air emission and pollution from the factory

1.3 1.3 OBJECTIVES OF THE ENVIRONMENTAL IMPACT ASSESSMENT

The developer undertook the environmental impact assessment of the proposed electrical engineering factory to ensure that the project will not cause significant negative environmental and socio-economic impacts.

The EIA has been conducted in accordance with the guidelines laid down by the Environment Management Act (EMA, 2004). Part IV of the EIA Regulations GN No. 349 of 2005 which provides the general objectives for carrying out EIA, among others. The list includes the following:

- to ensure that environmental considerations are explicitly addressed and incorporated into the development of decision making process;
- to anticipate and avoid, minimise or offset the adverse significant biophysical, social and relevant effects of developmental proposal;
- to protect the productivity and capacity of natural systems and ecological processes which maintain their functions;
- to promote development that is sustainable and optimises resources use and management opportunities.

The specific objectives of the EIA are:

- To establish baseline information on both natural and built environment including socio-economic conditions of the proposed project area;
- To identify, predict and evaluate foreseeable impacts, both beneficial and adverse of the proposed investment;
- To develop mitigation measures that aim at eliminating or minimising the potential negative impacts and promote positive ones; and
- To develop management plan and monitoring plan to be used during project implementation.

1.4 METHODOLOGY OF THE STUDY

The methodology employed in conducting the EIA study is in line with the Environment Impact Assessment and Audit Regulations, 2005, GN No.349 of 2005. The study was undertaken based on checklists developed by Consultants complimented by past experience of similar EIA studies. Observations of the proposed project site and surrounding habitats were done, also some literature, in terms of reports and documents, were reviewed. The study adopted the following methodology/approach:

1.4.1 Communication with Stakeholders

1.4.1.1 Identification of stakeholders

The identification of stakeholders was done prior to the scoping exercise. However, further consultation was undertaken during the EIA particularly with those stakeholders who were left out during scoping.

1.4.1.2 Involvement of stakeholders

The EIA study applied different participatory methods to consult all the concerned stakeholders. One on one interviews were held with every identified stakeholder. Every individual was given an opportunity to give his/her comments freely. Every detail of each stakeholder's comment was considered important and noted down.

1.4.1.3 Identification of stakeholders' concerns

Through interviews and discussions, stakeholders pointed out a number of issues and concerns. Relevant issues were noted and have been included in this EIA study report.

1.4.2 Data collection

1.4.2.1 Process of Identifying Information for EIA

In identifying information and data required for the impact assessment, a strategy for collecting information before or during the impact assessment study was put in place. Generally, baseline information on the bio-physical, socio-economic environment, institutional and legal conditions were collected from various sources including the Internet.

1.4.2.2 Field data / information collection

Project site observations were conducted by the consultant to obtain an overview of the existing situation, the following were done;

- Appraisal of physical conditions of the project site and areas that might be impacted by the project
- Appraisal of land use and assessment of other relevant socio-economic parameters;
- Review of literature: reports, policy, plans and legislation;
- Review of available maps of the project area;
- Field data / information collection

Interviews with experts, local community and other stakeholder groups;

Observations and other technical methods related to the sector in question

1.5 REPORT STRUCTURE

This report is organized in twelve chapters. Chapter one is on the introduction while chapter two entails the project background and its description. Chapter three is on the policy, administrative and legal framework within which the project will operate. Chapter four presents the baseline or existing conditions of the project site, surrounding areas and area of influence. Chapter five entails Stakeholders' consultation and public participation while chapter six deals with assessment of impacts and identification of alternatives. Chapter seven deals with mitigation measures while chapter eight present the environmental and social management plan. Environmental and social monitoring plan is presented in Chapter nine. Chapter ten is on resource evaluation or cost benefit analysis while chapter eleven is on decommissioning. The last chapter is twelve which gives the summary and conclusions of the report.

CHAPTER TWO: PROJECT BACKGROUND AND DESCRIPTION

2.1 LOCATION

The factory for manufacturing of electrical cables and concrete electrical poles will be located within the existing Starways Group Limited plots at Dundani village at Mkuranga ward, Mkuranga district in Coast region. The site is situated about 40 kilometres away from Dar es Salaam city centre and 6 kilometres from Mkuranga town centre along Kilwa road.

2.2 SITE DESCRIPTION

2.2.1 Existing Structures

The proposed site has various existing structures, there are 6 warehouses, office building, canteen building, toilets, parking lot, gate house and the power house. Starways Group Ltd has developed the premises into warehouses to store domestic wares for sale at Kariakoo, Dar es Salaam. Out of all buildings on site, 3 warehouses have been leased to M/s Everwell Cable and Engineering Company Limited for establishment of the proposed electrical cables and concrete electrical poles manufacturing factory.

2.2.2 Accessibility

The project site is along Kilwa road thus making it well accessible by tarmac road. It is 40 kilometres away from Dar es Salaam city centre and about 6 kilometres from Mkuranga town canter.

2.3 MAJOR ADJACENT DEVELOPMENTS

The project site is within designated industrial area at Mkuranga district. There are no major developments that have happened on either side of the project site. However the proposed factory will be located in the fenced plot which accommodates home ware and plastic plates manufacturing factories which are in operation.

2.4 OTHER AMENITIES

2.4.1 Power supply

The factory will need power for different use, among them including power for operating the machines and equipment, lighting purposes, etc. Currently the premises is connected to TANESCO network. A generator shall be installed to respond in case of power cut off from TANESCO which will be specified by service engineer.

2.4.2 Water supply

The project will require water for operating different activities, this include water for manufacturing activates, cooling the machines, gardening, for washrooms, water for domestic purposes, etc. Currently water in the premises is sourced from drilled boreholes since the area is not connected with piped water. Therefore, the developer will utilize existing borehole in the premises as well as harvesting rain water during rain seasons.

2.4.3 Waste Water Management

Wastes will be generated in all phases (operation and demolition). Two main categories of wastes are discussed hereunder;

Solid wastes

Solid wastes to be produced from electrical cables manufacturing process will all be collected within the factory. Office waste like papers will be collected at waste collection point then taken to district dumpsite while non-decomposable wastes of value like plastic bottles, scrap metal, plastic bags, etc. will be collected and sent to certified vendors for recycling. Biodegrable wastes like food remains will be buried and turned to manure for gardening

Liquid Wastes

The waste water from the factory including water for cooling the machines and equipment will be recycled back to the system for use. Water from toilets and washrooms and from kitchen will be collected, treated and disposed using onsite sanitation facilities comprising of septic tanks and soak away pits. Also water for curing of concrete poles will be collected in the water recycling tanks and reused.

Other liquid wastes to be produced include waste oil and greases, this will be drawn into oil water separator.

2.5 NATURE AND SCOPE OF THE PROJECT

The proposed development is that of a small scale electrical engineering factory. The project is estimated to cost Tsh 1,500,000,000/= The equity contributed by the shareholders is 750,000,000 equivalent to 50 %. The remaining part of 50% of investment financing will be done through borrowing from banks. However a financial policy of the Company states that the profits generated will be re-invested. The project management is planning to employ 60 people mostly from the surrounding communities.

2.5.1 Project structures

The proposed project will not constitute construction of any building but make use of existing warehouses within the factory complex. Main machines that will be imported for producing electrical goods, include the following:

- High voltage cables manufacturing machines
- Aluminium Conductor Steel Reinforced machines
- Plastics extruder machines and Equipment
- Insulating machines
- Electrical Conduit Extrusion Production Line
- Electrical Conduit Pipe Extruder Machine
- Plastic extruder heater
- Electrical Fittings machines.
- Concrete mixer machines for mixing a concrete
- Crane for lifting the poles
- Trucks, etc.



Photo 2.1: Photo showing front view of warehouse

Source: Field work, September 2016



Photo 2.2: Photo showing rear view of warehouse

Source: Field work, September 2016

2.5.2 Operation and Decommissioning Phases

The project development will involve various phases i.e. operation phase as well as decommission phase though not in the near future.

2.5.2.1 Operation Phase

Production activities for Electrical Concrete Poles

The manufacturing of both electrical cables and concrete electrical poles will involve a number of stages from raw materials importation and storage to finishing as elaborated below.

Stages for the manufacturing of electrical concrete poles

i. Firstly, raw materials for manufacturing of concrete electrical poles like Sand, Crushed Stones and Cement are mixed in a required ratio in the concrete mixing machine.
ii. The second activity involves preparation of mould by winding up high strength steel wire of different sizes, followed by the preparation of steel cage to support the mould
iii. The third step is to clear the mould, and brush the mould to make it clean
iv. Lifting the steel cage into mould, then use screw nuts to fix the mould.
v. The next stage will involve mixing of the raw materials (Sand, aggregates and Cement) and water in the concrete mixing machines to form concrete then it is fed into mould and pressed through machine main shaft
vi. After 3 hours, the mound is opened, then cured for 5-7 days to accelerate early hardening of concrete and mortars by exposing it to steam and humidity. In the curing chamber, the control of temperature and humidity is of prime importance to avoid fracture and crumbling or other defects later in their service life.
vii. The mould is then released from the cage and stored in the yard ready for use

Production activities for Electrical Cables

1. The first step in the manufacturing process for electric cables is taking the first round copper rod or round aluminium rod to the compound processing exit by crane and burning under high temperature to form a semi-liquid

compound. Then the molten copper or aluminium is directed to a series of synthetic diamond dies which gradually decrease in size. The rod and dies are flooded with a coolant and a synthetic lubricant to increase the life of the dies and keep the copper wire from overheating.

2. The wire, now soft and flexible, is passed through an extruder, where either a single or double coating of plastic is applied. High-density polyethylene pellets and the colors are fed into the cool rear section of the extruder; as they are pushed forward, they are heated until they melt. Exiting the extruder, the coated wire, now traveling and passes through another cooling section trough and is coiled
3. After wire drawing, the wire is extremely brittle and will be easily fractured if flexed. Since finished aluminium or copper wire must be flexible, the wire is softened, or annealed at this point. Annealing is accomplished by passing a large electrical current through the wire for a fraction. To prevent oxidation of the wire, this step is performed in water. The water bath also cools and cleans the wire in preparation for the insulating step. Before the reels move to the next manufacturing operation, wire and insulation diameter will be measured, and the wire will be tested for such electrical properties as capacitance and resistance.
4. Twisting and stranding, in this next step, the insulated wires are twisted into wire pairs-the different standard insulation colours will be combined into different standard pair combinations. At twist, two and more wires of the same gauge will be twisted together using a proprietary formula to determine twist length. Twist lengths will vary from inches with the unit of change
5. The next phase of process will be jacketing of the wire. Depending on the cable design, a protective metal sheathing of either aluminium or copper and steel combined will be added during this manufacturing step. The aluminium or copper will acts as a grounding path for high-voltage surges that may be caused by lightning strikes and other eventualities in aerial cables, while steel adds mechanical protection for buried cable against pests such as rats and gophers.

The outer cable jacket is extruded in the next step. It will be usually made from low-density polyethylene, black in colour and resistant to ultraviolet light in case it is exposed to sunlight. This rugged plastic is the final protection for the enclosed cable against the environmental conditions underground or when strung to utility poles

The jacketed cable then passes through a temperature- controlled water trough, which cools the jacket. The cable is dried, and the top layer of the jacket will be heated slightly so that printer markings can be imprinted on it. Because of the heating, the markings will be stamped into the jacket itself and will last the life of the cable.

6. Cables tested: Before electrical cable testing begins, each cable will be given a final test for physical construction. An inspector checks for proper placement of units, sub-units, and spare pairs within the cable. Electrical tests will include a ring out of all conductors for continuity, and a core-to-sheath test. The core-to-sheath test will measures minimum voltage requirements between the cable core and the metal sheath; this will helps to ensure that high-voltage surges, such as lightning strikes, cannot reach the conductors. A high-voltage test will also performed, and all conductors are checked for electrical integrity. Random tests are performed for mutual capacitance, unbalance, and resistance.

7. Packaging and Storage: After the whole production activities, products will be parked into bundles of different sizes, and packed in different containers such as boxes, plastic containers, etc. After all process the products will be taken to the storage yard waiting the customers

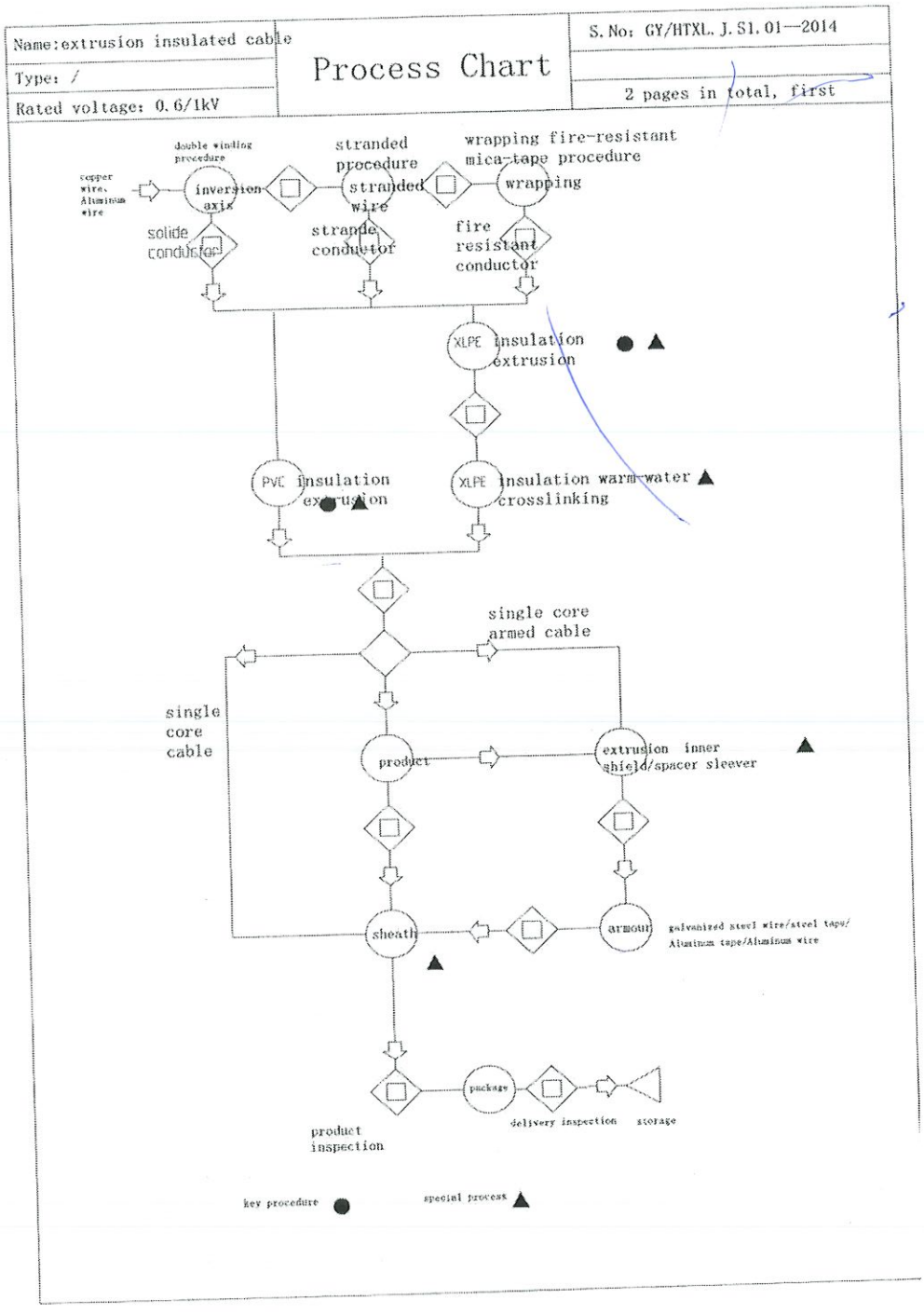


Figure 2:2 Process Flow Chart for the manufacturing of Electrical Cables

Source: Everwell Cable and Engineering Company Ltd, 2015

2.5.2.2 Decommissioning Phase

Decommissioning is the process that takes place when the project comes to an end. Although there is no specific time that is set for decommissioning of the proposed project at moment but there will be a time when a project will come to an end where the factory and its associated infrastructure would be demolished. This will involve uninstalling and removing of the machines and other equipment used for their activities, or total demolition of the whole warehouse etc., site clearance and transporting all wastes and demolished materials to a disposal site. Eventually, site restoration will be done to ensure that the area returns to its original condition that existed previous prior to construction of the warehouses and the installation of this factory.

2.6 PROJECT INPUTS AND OUTPUTS

2.6.1 Project Inputs

Since the proposed factory will involve the production of concrete electrical poles and electrical cables of different sizes, the project will need a variety of raw materials.

2.6.1.1 Raw Materials

Table 1:1 Raw Materials for manufacturing of Concrete Electrical Poles

No	Name	Origin	Monthly Quantity
1	Cement	Local	195Tons
2	Sand	Local– Licensed suppliers	260Tons
3	Reinforcing Steel Bar	China	45tons
4	Water	Local /onsite borehole	60tons

Source: Everwell Cable and Engineering Company Ltd, 2015

Table 2:2 Raw Materials for Production of Electrical cables

SN	Name of Raw Materials	Annual Demand(Tons/Year)	Material origin
1	Round copper rods for electrical purposes	1900T	China
2	Round copper wire for electrical purposes	2200T	China
3	Tinned Round copper wire	1300T	China
4	Round aluminium rods for electrical purposes	385T	China

SN	Name of Raw Materials	Annual Demand(Tons/Year)	Material origin
5	Round aluminium wire for electrical purposes	385T	China
6	Alkali free glass fibre ribbon	40T	China
7	Polyester film for electrical insulation	270T	China
8	Galvanized steel core wires for aluminium cable steel reinforced	250T	China
9	Galvanized low carbon steel wire for armoured cable	750T	China
10	Steel strip for armoured cable	900T	China
11	Cable shielding strip		China
12	Cross linked polyethylene cable insulation material	200T	China
13	Semi conductive shield for rated voltage 35kV and below extruded insulated cables	1700T	China
14	Polyethylene plastics for wire and cable	1900T	China
15	Polyethylene plastics for wire and cable	1100T	China
16	Low smoke halogen free flame retardant polyolefin sheath material for wire and cable	300T	China
17	Non-woven cloth	40T	China
18	Aluminium strip used for armoured cable	1100T	China
19	Black cross linked polyethylene insulation for weather resistant (overhead) insulated cables	570T	China

Source: Everwell Cable and Engineering Company Ltd, 2015

2.7 PROJECT OUTPUT

The project will produce electrical cables and concrete electrical poles of different sizes as detailed in the following sub sections.

2.7.1 Electrical Cables Products

Everwell Cable and Engineering Company Ltd factory shall produce electrical cables and related equipment including: copper wire for electricity

transmission, aluminium wire, electrical insulators for 35kv, armoured cables and weather resistant cables.

Everwell Cable and Engineering Company Ltd is targeting to supply its products to all regions in Tanzania specifically to the following customers: Wholesale and retail hardware suppliers, Electrical equipment suppliers and Contractors and Real estate developers.

2.7.2 Concrete Electrical Poles

The factory for manufacturing concrete electrical poles plans to produce 1500 pieces of poles per month.

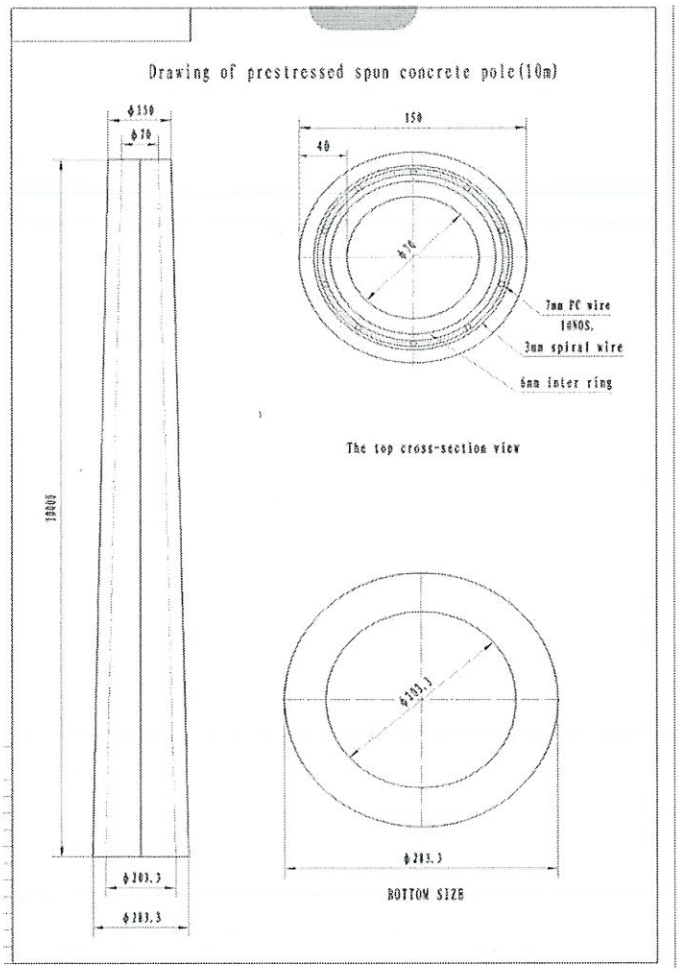


Figure 2.2: Cross section of a typical Concrete electrical pole



Photo 2.3: Photo showing typical concrete electrical pole

Source: Everwell Cable and Engineering Company Ltd, 2016

Solid Waste Management

Non-metalic materials will be generated in the process. Main solid wastes that are likely to be generated during production include used papers, cement bags, packaging waste pieces of wires and plastics will be collected by a district solid waste contractor and disposed of in a district dump site. Liquid wastes from washrooms will be collected in septic tank. The drainage system within the factory will be made clean to avoid blockage. The production itself does not produce waste water although waste water will be generated from cooling machines.

Liquid waste management

In the manufacturing process, wastewater will be generated during cooling but will be recycled. Waste water to be generated from toilets and washrooms and from kitchen will be collected through onsite waste water septic tanks and soak away pits. Oily wastewater will be directed to water/ oil separator. Also the developer envisage to recycle waste water resulting from machine cooling. This saves cost and does not pollute the environment.

Exhaust Emissions control

Heating and extrusion stage may produce small amount of smoke inside the workshop. Smoke will be excluded by suction in an extruder above the machines. In addition, the warehouse has good ventilation which will minimize accumulation of gases, thus ensuring the health of plant staff is safguarded.

2.8 PROJECT AREA/EIA BOUNDARIES

The area of influence of the project covers the whole neighbourhood and the road network which is linked to the project area in the course of transferring equipment, raw materials and products. The project will be within Dundani village where the tarmac road to Dar es Salaam passes. Looking at this project area of influence which is linked to the road network, it is evident that the boundary of the project will be considered in terms of spatial, temporal and institutional boundaries as presented below in the subsequent sub sections.

2.8.1 Spatial boundary

Spatial boundaries refer to impact area coverage. Some of impacts have local (village, district or regional or international implications. On impact area coverage two concentric influence zones may be considered, namely;

Core Area of influence: - This is an area of approximately 1 hectare. This is the area which will receive the most intense physical impacts of operations. Outside this area there are neighbouring residential houses within the radius of 500m. These surrounding land areas may be treated as "receptors" of some of the impacts such as dust. Given the nature of operations, it is evident that minor impacts will be realised.

Wider area of influence: - In determining the wider area of influence, the assessment will involve looking into areas that will be impacted by the project activities. This includes road networks for delivering raw materials to site and factory products to the market.

2.8.2 Temporal Boundaries

Temporal boundaries are referring to project life span and the reversibility of impacts. The project under consideration is envisaged to last for 30 years from the date of setting up to the date when the building structures need replacement or refurbishment works on it.

Furthermore, the environmental and socio-economic influence of the project is anticipated to extend beyond the project area. Bio-physical parameters and socio-economic aspects such as employment dynamics, transportation, markets of products have been used in assessing the temporal boundary.

CHAPTER THREE: POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 INTRODUCTION

There are a number of policies and legislations setting out legal and regulatory requirements and which are relevant to the proposed Electrical engineering Factory project. There are also national standards governing environmental management and protection, health and safety. The proponent shall ensure compliance with the following identified policies, national plans/strategies legislations and standards.

3.2 NEED FOR ENVIRONMENTAL IMPACT ASSESSMENT

Environmental Impact Assessment is one of the planning tools which are used to facilitate and promote sustainable development by integrating environmental consideration in the decision making process to ensure that unnecessary damage of the environment is avoided. EIA also seeks to optimise resources use and management opportunities. Due to the importance of EIA, most sector policies and legislation have incorporated the requirement of undertaking EIA prior to the implementation of development projects.

3.3 RELEVANT POLICIES

The following are relevant sectoral and cross–sectoral policies which provide directives on how projects should be implemented in relation to concerned environmental and socio-economic settings. The project proponent shall consult these policies in the course of designing and implementing the proposed project activities.

3.3.1 National Environmental Policy (1997)

The National Environment Policy provides a framework for environmental protection in Tanzania. The policy requires that project development be done

in a way that does not compromise the environmental integrity. It stipulates that the chosen technologies should be environmentally sound, socially acceptable and economically viable. Relevant provisions of this policy to electrical engineering factory operations are:

- Sections 28 and 29, which state that in all projects, environmentally sound technologies (i.e. those that generate no or low waste or protect environment) should be used).
- Section 48 (c), which advocates for technologies that use water efficiently and provides wastewater treatment.
- Section 56 (f), which states that workers' health should be adequately protected from environmental health hazards.

The proponent shall comply with all of above and other relevant provisions.

3.3.2 National Development Vision 2025

The National Development Vision 2025 foresees the alleviation of widespread poverty through improved socio-economic opportunities, good governance, transparency and improved public sector performance. These objectives not only deal with economic issues, but also include social challenges such as education, health, the environment and increasing involvement of the people in working for their own development. The thrust of these objectives is to attain a sustainable development of the people. Establishment of the electrical cables and Concrete electrical cables factory will contribute towards realisation of the Vision's objectives.

3.3.3 National Strategy for Growth and Reduction of Poverty (MKUKUTA)

The strategy is viewed as an instrument for channelling national efforts towards broadly agreed objectives and specific inputs and outputs. The poverty reduction strategy is to a large extent, an integral part of ongoing macro-economic and structural reforms. Among the areas of concentration that are relevant to the proposed project include achieving the target of accelerated economic growth. The proposed project will bring in investment capital and also create employment opportunities.

3.3.4 National Water Sector development strategy, 2006

The National Water Sector Development Strategy (NWSDS) sets out how the Ministry of Water is will implement the National Water Policy. The Strategy is a blueprint for prioritized timely and appropriate interventions to address the

Water Sector challenges in the process of achieving all the targets narrated in the National Strategy for Growth and Reduction of Poverty by 2010, the Millennium Development Goals by 2015, and contribute towards achieving the Tanzania Development Vision targets by 2025. Furthermore the Strategy leads to reshaping and increasing sector financing through a smooth and manageable institutional arrangement.

The NWSDS has been developed to support re-alignment of the water related aspects of other key sectoral policies (for example, energy, irrigation, industry, mining, and the environment) with the National Water Policy, and to provide a focus on specific roles of the various actors through clearly defining roles and responsibilities and hence the removal of duplications and omissions.

Although electrical cables and Concrete electrical cables factory doesn't depend on water supplied from the urban water supply authority which is body governed by the Ministry of water, the proponent, being a stakeholder, commit to accord necessary cooperation to achieving the objectives of the National Water Sector Development Strategy.

3.3.5 Sustainable Industrial Sector Development Policy (1996)

In line with the National Environmental Policy (NEP), the Sustainable Industrial Policy, section 3.5.3 refers to sound environmental management in order to ensure promotion of environmentally friendly and ecologically sustainable industrial development. The policy underscores the importance of carrying out EIA. Also the government among other things pledges to promote the continuous application of an integrated preventive environmental strategy to industrial processes, products and services. This strategy include propagating efficient use of raw materials and energy; elimination of toxic or dangerous materials, as well as reduction of emissions and wastes at source. Everwell Cable and Electrical engineering Company Ltd, is committed to observe the provisions of this policy by embracing cleaner production.

3.3.6 National Land Policy (1995)

The National Land Policy advocates for the protection of land resources from degradation for sustainable development. Among other things, the policy requires that project development take due consideration of land capability, ensures proper management of the land to prevent erosion, contamination and other forms of degradation. Important sections of the policy relevant to the developer are 2.4 (on use of land to promote social economic development) and section 2.8 (on protection of land resources). This policy is relevant to the proposed project as it emphasizes protection of land resources including soil. Everwell Cable and Electrical Engineering Company Ltd shall ensure that soil is not contaminated in any way during its operations.

3.3.7 The National Energy Policy (2003)

The policy outlines measures to adopt clean technology and minimize energy losses. The policy states that energy is a prerequisite for the proper functioning of nearly all sub sectors of the economy. It is an essential service whose availability and quality can determine the success or failure of development endeavours. In the industry sector, a major policy objective on energy end uses is the progressive reduction of dependence on imported energy through the use of demand management to reduce the negative effects of continued dependence on imported petroleum products. Furthermore, the policy calls for efforts to promote switching from petroleum to other environmentally friendly alternative sources such as natural gas. Everwell Cable Engineering Company Ltd shall abide the policy.

3.3.8 The National Investment Policy (1997)

National Investment Promotion Policy seeks to promote the growth of investments by strategically utilizing the scarce natural, social and capital resources to accomplish it. One of the key policy objectives is maximum promotion of high quality domestic goods and services to enhance the development of a dynamic and competitive industrial production sector. The policy insists that promotion of the investment must be accompanied by strategies that aim at increasing high quality domestic goods so as to reap the benefits of local investment. Everwell Cable and Engineering Company Ltd is committed to adhering to the policy.

3.3.9 The National Employment Policy (1997)

The major aim of this policy is to promote employment, mainly for Tanzania citizens. Relevant sections of this policy are (i) 10, which lays down strategies for promoting employment and section 10.1 is particularly focusing on industry and trade sectors (ii) 10.6 which deals with employment of special groups i.e. women, youth, persons with disabilities and (iii) 10.8 which deals with the tendencies of private industries to employ expatriates even where there are equally competent nationals. Everwell Cable and Electrical Engineering Company Ltd shall abide by this policy by employing local experts.

3.3.10 National Policy on HIV/AIDS (2001)

This policy provides a framework for leadership and coordination of the National multi-sectoral response to the HIV/AIDS epidemic. One of the major objectives of the policy is to strengthen the role of all sectors, public, private, NGOs, faith groups, CBOs and other specific groups to ensure that all stake

holders are actively involved in HIV/AIDS work and to provide a framework for coordination and collaboration. The policy recognizes that HIV infection shall not be grounds for discrimination in relation to education, employment, health and any other social services. Pre-employment HIV screening shall not be required. For persons already employed, HIV/AIDS screening, whether direct or indirect, shall not be required. HIV infection alone does not limit fitness to work or provide grounds for termination. HIV/AIDS patients shall be entitled to the social welfare benefits like other patients among the employees. HIV/AIDS information and education targeting the behaviour and attitudes of employees and employers alike shall be part of HIV/AIDS intervention in the workplace. Everwell Cable Electrical Engineering Company Ltd shall adhere to the policy.

3.3.11 National Economic Empowerment Policy (2004)

The Policy is intended to address economic empowerment needs of the individual citizens of Tanzania and local companies. The Policy takes on board all economic actors including farmers, livestock keepers, fishermen, employees, traders as well as other groups of individuals in various economic activities. The Policy puts in place the general guidelines for the formulation of strategies to be used by respective sectors depending on the prevailing circumstances. In this respect, each sector is enjoined to come up with concrete implementation strategies. This policy is relevant to the proposed project as it touches production industry which this project has a direct bearing.

3.3.12 The National Transportation Policy (2003)

The policy aims at guiding the development of an efficient, well integrated and coordinated transport infrastructure and operations, which are economically financially, socially and environmentally sustainable.

Relevant section of the policy is:

- 4.1.1 (vi) on the intention of the policy to facilitate sustainable development by ensuring all aspects of environmental protection and management are given sufficient emphasis at the design and development stages of transport infrastructure and when providing services

Given the fact that there will be transportation of raw materials to the factory and products out of the factory, Everwell Cable and Engineering Company Ltd is directly linked to the policy in its activities.

3.3.13 National Water Policy, 2002

The National water policy recognises the following:

- There is a growing scarcity, misuse and wastage of water resources in many places of Tanzania, which may become a serious threat to sustainable availability of the resource;
- Existence of uncontrolled abstraction of water resources;
- Existence of ecological minimum flow levels of surface water flow to sustain ecosystem's flora and fauna;
- The state of the quality of water resources is not comprehensively known and no regular monitoring is done due to inadequacy of resources and institutional capacity;
- Water resources are one of the major agents for socio-economic activities. There are various socio-economic water use activities that compete for limited resources particularly during droughts and times of scarcity. A criterion for prioritisation of water use at different times of year to address the growing competition for water is lacking, resulting into conflicts among users. The policy, however, states that priority in this circumstances shall be, supply of domestic water and water needed to maintain ecosystem functioning;
- Inadequate linkage between water and land development thus resulting in pressures on water resources. With the ongoing liberalisation there is need to have co-ordination mechanism to facilitate smooth linkage. Water Rights shall not be tied to any land, and they shall not be transferable with land transfer.

Water needs for electrical cables and Concrete electrical poles factory shall be met via an existing borehole within the factory premises. However, Everwell Cable Electrical Engineering Company Ltd shall make efforts to ensure that water is used wisely and no further drilling of boreholes is done without applying for water user right as required by the law.

3.3.14 National Health Policy (2007)

One of the main objective of this policy is to ensure that health services are available and accessible to all people wherever they are in the country,

whether in urban and rural areas. The policy encourages safe basic hygienic practices in workplaces, promote sound use of water, promotes construction of latrines and their use, encourage maintenance of clean environment; working environment which are conducive to satisfactory work performance. The policy puts more emphasis on ensuring workers' protection against all occupational hazards, which may occur in their work places such as industries, estates, plantations and other high-risk institutions. It is the responsibility of the management at work places to offer health information and services to their employees according to guidelines given by the Ministry of Health. The Councils will be responsible for the coordination and guidance in the provision of health services to employees of these institutions, with technical support from the Regional Secretariat and Ministry of Health. Everwell Cable and Electrical Engineering Limited shall observe this policy.

3.4 RELEVANT LEGISLATION AND REGULATIONS

This section addresses the legal and regulatory conditions which are relevant to the proposed Everwell Cable and Engineering Factory project. This EIA has been conducted in general compliance with the following legislations.

3.4.1 Environmental Management Act No. 20 of 2004

The Environmental Management Act, Cap 191 seeks to provide for legal and institutional framework for sustainable management of the environment in the implementation of the National Environmental Policy.

The Environmental Management Act provides for continued existence of the National Environmental Management Council (NEMC). Under this Act, NEMC is mandated to undertake enforcement, compliance, review and monitoring of environmental impact assessment and has a role of facilitating public participation in environmental decision making, exercise general supervision and coordinating over all matters relating to the environment. The Act also requires the Council to determine whether the proposed project should be subjected to an EIA, approves consultants to undertake the EIA study, invites public comments and also has the statutory authority to review EIS and recommend to the Minister for approval and issuance of EIA certificate. This new Act imposes an obligation on developers to conduct an EIA prior to the commencement of the project to determine whether the project may/or is likely to have, or will have a significant impact on the environment. Article 82 makes EIA mandatory to all projects that fall under the EIA mandatory list (Schedule 3). Everwell Cable and Electrical Engineering Company Ltd has complied with relevant provisions of the Act in carrying out this EIA.

3.4.2 The Land Act, No. 4 of 1999

The purpose of this law is to make sure that the general idea and aim of the National Land Policy are acted on. The Act seeks to control land use and clarify issues pertaining to ownership of land and land-based resources, transactions on land and land administration.

The Land Act introduces into the body of the law for the first time, fundamental principles of land policy including the principle of ensuring that *"land is used productively and that any such use complies with the principles of sustainable development*". This principle is introduced in a way that is enforceable in courts of law. Therefore, during project implementation, the Act will be observed by the proponent. As a first step, the project proponent i.e. Everwell Cable and Engineering Company Ltd agreed to conduct the EIA to guide project operations.

3.4.3 Land Use Planning Act, No. 6 of 2007

The National Land Use Commission (NLUPC) was established under this Act as the principal advisory organ of the Government on all matters related to land use. Among other things, the Act recommends measures to ensure that Government policies, including those for development and conservation of land are in harmony. It also takes adequate account of their effects on land use and seeks the advancement of scientific knowledge of changes in land use. It encourages development of technology to prevent, or minimize adverse effects that endanger man's health and his/her welfare. It also specifies standards, norms and criteria for beneficial uses and maintenance of the quality of land.

In accordance with the functions mentioned in the Act, the Commission can indirectly help to prevent or minimize environmental and socio-economic impacts through advising on proper location of economic activities. The Engineering factory is planned in accordance with the requirement of the Act and future developments shall also adhere to it.

3.4.4 Occupational Health and Safety Act, 2003

This Act deals with the protection of human health from occupational hazards. It specifically requires the employer to ensure the safety of workers by providing safety gears at the work place. Relevant sections of the ordinance to the project activities include Part IV which deals with general health

provision, such as provision of regular medical examination of employees; Safe means of access and safe working place, prevention of fire etc.; and Part V on health and welfare provisions, which includes provision of supply of clean and safe water to workers, sanitary convenience, washing facilities and first aid facility. Section 50 deals with fire prevention issues

Section 15 gives powers to the Registrar of factories and workplace to enter any factory or workplace to perform his/her duties as provided by the Act. Section 16 requires that factories and workplace be registered with the Registrar of factories and workplaces before commencing operations. Everwell Cable and Engineering Company Ltd shall observe the provision of this Act during all stages of the project development and operation.

3.4.5 Water Resource Management Act, 2009

The Act provides for the protection of the water resources and the user so that there is a balance between different uses. The provisions of the Act will be adhered to during implementation by ensuring that surface and ground water sources are protected. Furthermore, water to be sourced from a bore hole shall be used wisely at the project site.

3.4.6 Tanzania Investment Act CAP 38 R.E 2002

The act provides for legal mandates of Tanzania Investment Centre, which shall assist all investors to obtain necessary permits, authorizations, approvals, registrations, consents, licences and any other matter required by law for a person to set up and operate investment in Tanzania. The proponent has complied with the relevant provision of the act by applying for the certificates of investment which was granted accordingly

3.4.7 Employment and Labour Relations Act 2004

This Act guarantees fundamental Labour rights and establishes basic employment standards. The Act provides broad protection against discrimination. Specifically, the Act mandates that employers "promote equal opportunity in employment and strive to eliminate discrimination in any employment policy or practice." It prohibits direct or indirect discrimination by employers, trade unions and employers' associations on a number of grounds, including gender, pregnancy, marital status or family responsibility, disability, HIV/AIDS and age. Harassment of an employee on any of these grounds is equally prohibited. The Act also requires employers to take "positive steps" to guarantee women and men the right to a safe and healthy

environment. Everwell Cable and Electrical Engineering Company Ltd will observe the Act.

3.4.8 Public Health Act, 2008

The Act provide for the promotion, preservation and maintenance of public health with a view to ensuring the provisions of comprehensive, functional and sustainable public health services to the general public. Everwell cable and Engineering Company Ltd shall observe Part IV of the Act which relates to sanitation, housing and hygiene. The Part also makes provisions for matters relating to nuisance, housing and human settlement, waste management, sewerage and drainage.

3.4.9 The Companies Act Cap 212 R: E 2002

This is an Act to repeal and replace a law relating to companies and other associations, to provide for more comprehensive provisions for registration and control of companies, associations and related matters.

According to this Act, any two or more persons associated for any lawful purpose may, by subscribing their names to a memorandum of association and otherwise complying with the requirement of the act in respect of registration, form and incorporated company with or without limited liability. The Act also requires foreign companies which are registered in their countries of origin to be registered anew in Tanzania in order to operate in the country. The requirement of this Act has been observed as Everwell Cable and Electrical Engineering Company Ltd is registered with BRELA.

3.4.10 Industrial and Consumer Chemicals (Management Control) Act, 2003

The Industrial and Consumer Chemicals Act provides for proper management and control of industrial and consumer chemicals in Mainland Tanzania. It requires that any person dealing in industrial chemicals has to register with the Industrial and Consumer Chemicals Management and Control Board. The Third Schedule of the Act provides a long list of chemicals that need to be registered. In case the project imports or uses chemicals for its activities then it will have to comply with requirement of this law during the importation, storage, use and disposal of those chemicals. Everwell Cable and Engineering Ltd will observe the provisions of this Act.

3.4.11 Fire and Rescue Force Act, 2007

The act empowers the commissioner general of the force or his agent to enter premises to ascertain any contravention of provisions of the Act and obtain information required for fire fighting purposes. A court may issue an order for a closure or prohibit the use of any premises for human habitation or storage in case there is failure to comply with fire prevention regulations. Everwell Cable and Engineering company Ltd shall abide by the relevant provisions of the Act to ensure safety and security of its work force and the general public.

3.4.12 Prevention and Control of HIV/AIDS Act, 2008

The Act focus basically on provision of the prevention, treat, care support and control of HIV and AIDS, for provision of the public health in relation to HIV and AIDS; to provide for appropriate treatment, care and support using available resources to people living with or at risk of HIV and AIDS and to provide for related matters under this Act.

Further, the Act stipulates the following: Section 4(1) gives details of promotion of public awareness on cause, mode of transmission, consequences, prevention and controls of HIV and AIDS. Also, it describes mode of reduction in spreading, prevalence of STI's in the population and adverse impacts resulting from HIV and AIDS as well as protection right of orphans.

Everwell Cable and Electrical Engineering Company Ltd. shall operate within the requirements of this legislation in addition to those of the HIV policy.

3.4.13 The Urban Planning Act No. 8 of 2007

The Act provides for control of urban and sub rural development while implementing a project for land development. Important aspects include the designation and allocation of adequate land for solid waste disposal in any urban and sub rural areas. The law empowers local authorities to enforce such schemes and punishments as stipulated in the Act. The law further empowers neighbours and any individual to take to court anyone who injuriously affects others due to his/her unhygienic activities. Everwell Cable and Engineering Company Ltd will observe good solid and liquid waste disposal practice as required by the Act.

3.4.14 Energy, Water Utilities Regulatory Authority (EWURA) Act of 2001

The purpose of this Act is to regulate electricity, water, petroleum and gas trading in Tanzania. This act consolidates the laws in relation to energy and water utilities in Tanzania Mainland. Under this Act, the EWURA with prior approval of the minister, make rules in respect of the regulated goods and services. The Act gives EWURA the legal mandate to issue, renew and cancel licenses of service providers in the regulated sectors (Electricity, Petroleum, Natural Gas, Water etc.).

As Everwell Cable and engineering company will abide by the provisions of the Act.

3.4.15 The Standards Act, 2009 (Act No. 2/09)

This is an Act to provide for the promotion of the standardization of specifications of commodities and services, to re-establish the Tanzania Bureau of Standards and to provide better provisions for the functions, management and control of the Bureau, to repeal the Standards Act, Cap 130 and to provide for other relation matters.

Relevant standards for the development of the electrical engineering plant are TZS 932:2006, TZS 343:1989: and TZS 845:2005- which stipulate the standards of noise level, industrial effluent discharges and air quality respectively to be adhered during operation of the plant.

Everwell Cable and Engineering Company Ltd shall adhere to the above and all other relevant standards its operations.

3.4.16 Environmental Management Act (Air Quality Standards) Regulations, 2007

These regulations have been made under sections 140, 145 and 230 (2) (s) of the Environmental Management Act, 2004. They are aimed at setting minimum standard of air quality as well as prohibit emission of hazardous substances, chemicals and materials or gas. They also provide for emission limits, highest permissible quantity (emission), and special tolerance limits of emissions from factories and exhaust emissions of motor vehicles.

In its industrial operations, Everwell Cable and Engineering Company Ltd shall abide by these regulations including adhering to permissible weight concentration (Emission limits) from the atmosphere to a receptor as set out in the first schedule of the regulations.

3.4.17 The Environmental Management (Soil Quality Standards) Regulations, 2007

These regulations have been made under Section 143, 144 and 230 (2) (s) of the Environmental Management Act, 2004. They are aimed at, among other things, prescribe minimum standard of soil quality to maintain, restore and enhance the inherent productivity of soil in the long term.

Section 21(1) stipulates that no person is allowed to discharge effluent from industrial, commercial or any other trade into soil without a consent dully granted by the Council or any other person designated by the council for that purpose.

Everwell Cable and Engineering Company Ltd shall make every effort to adhere to these regulations in its industrial operations.

3.4.18 The Environmental Management (Water Quality Standards) Regulations, 2007

These regulations have been made under Section 143, 144 and 230 (2) (s) of the Environmental Management Act, 2004. They are aimed at, among other things, setting permissible limits for district and industrial effluents, special permissible limits for chrome tanning industries, special tolerance limits for vegetable industry, special tolerance limits for fertilizer industry, taste, colour and smell of potable water and Chemical and physical limits for quality of Drinking Water Supplies. Of relevance to the proposed electrical engineering plant is the first schedule particularly Table A and B which stipulate permissible limits for district and industrial effluents.

Everwell Cable and Engineering Company Ltd shall abide by the regulations by ensuring that waste water discharged into oxidation ponds does not lead to pollution of water bodies.

3.4.19 Environmental Management Act (Hazardous Waste Control) Regulations, 2007

These regulations have been made under Section 110(4) and (5), 128, 133(4), 135 and 230(2) of the Environmental Management Act, 2004. These regulations apply to all categories of hazardous waste and to generation, storage, disposal and their movement into and out of mainland Tanzania. These regulations require that any person dealing with hazardous waste in Tanzania be guided by the following principles of environment and sustainable development:

i. The precautionary principle,
ii. Polluter pays principle, and
iii. the producer extended responsibility

Everwell Cable and Engineering Company Ltd shall abide by the requirement of the regulations.

3.4.20 The Environment Impact Assessment & Audit Regulations, 2005

These Regulations set out the EIA procedure and regulatory system for carrying out EIA in Tanzania which requires every developer to follow. This EIA has been carried out in accordance with these Regulations i.e. Registration of the project with NEMC, Screening exercise, producing scoping report (including development of ToR), and Impact Assessment (Environmental Impact Statement (EIS). The EIS report take into account environmental, social, cultural, economic and legal considerations, identify anticipated impacts, analyses alternative options, propose mitigation measures and develop management plans. Everwell Cable and Engineering Company Ltd abides by the Act by doing this EIA.

3.5 INTERNATIONAL AGREEMENTS, CONVENTIONS AND TREATIES

3.5.1 3.5.1 Africa Convention on the Conservation and Natural Resource (1968)

This Convention intends to promote conservation efforts by requiring contracting States to adopt the measures necessary to ensure conservation, utilization and development of soil, water, flora and fauna resources in accordance with scientific principles and with due regard to the best interests of the people. Everwell Cable and Engineering Company Ltd will support Tanzania's commitment by promoting conservation efforts in all of its operations.

3.5.2 Convention on Biological Diversity, Rio De Janeiro, May 1992

Tanzania signed the CBD in 1992 and ratified it in March 1996, thereby committing to the conservation and sustainable use of biological diversity. The objectives of this Convention, are the Conservation of Biological Diversity, the

sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding. Article 8 of the CBD addresses in situ conservation, stating that each Contracting Party shall:

- "Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
- Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings; and
- Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application..."

In the course of its operations, Everwell Cable and Engineering Company Ltd will ensure that the provisions of the Convention are observed.

Other relevant International Conventions Ratified by Tanzania include:

- ILO Convention: C138 Minimum Age Convention, 1973 (Ratified by Tanzania (United Republic of) on 16:12:1998) which prohibits Child labour. Everwell Cable and Engineering Company Ltd shall ensure no child is employed to do any of its activities.
- ILO Convention: C148 Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (Ratified by Tanzania (United Republic of) on 30:05:1983) which protects Workers against Occupational Hazards in the Working Environment Due to Air Pollution and heat. EVERWELL Cable and Electrical Engineering Company Ltd shall ensure workers are protected against occupational hazards.
- ILO Convention: C182 Worst Forms of Child Labour Convention, 1999 (Ratified by Tanzania (United Republic of) on 12:09:2001). Everwell Cable and engineering company Ltd shall ensure no child is employed in its activities.

At international level EIA has been proposed as a tool for environmental planning to ensure sustainable development. Tanzania has ratified or acceded to a large number of international treaties and conventions. Among those International agreements convention and treaties that are relevant to the proposed Electrical Cables and concrete poles factory include:

3.6 INSTITUTIONAL FRAMEWORK

The Environmental Management Act (EMA, 2004) gives mandate to NEMC to enforce compliance process. It empowers NEMC to determine whether a proposed project should be subjected to an EIA, approves consultants to undertake the EIA study, invites public comments etc. In carrying EIA review NEMC carries site visits, convenes the Technical Advisory Committee (TAC) meeting and advises the responsible Minister on issuing Environmental Certificate. Continuously, NEMC is responsible for carrying out monitoring and auditing of environmental performance of the project. Table 3.1 provides key institutions that have a role to play in as far as Electrical Cables and Concrete poles Factory is concerned.

Table 3.1: Key Institution that have a role in the EIA process

Level	Institution	Role and Responsibility
National level	Vice President's Office, Division of Environment	• Formulate Policies and guidelines • Coordinate environmental issues at the national level • Issuing an Environmental Certificate
	NEMC	• Project screening, approval of ToR, Review of EIS • Environmental Monitoring and Compliance Auditing • Advise Government on all environmental matters
	Fire and Rescue Force under the Ministry of Home Affairs	• Issuing guidelines on operating machines in safe ways • Responding to fire emergences
Project Proponent	Everwell Cable and Engineering Company Ltd	• EIA study • Project investment • Project implementation • Consultation with stakeholders • Project monitoring and internal auditing.
Mkuranga district and	District Council Office	• Day-to-day environmental management

Level	Institution	Role and Responsibility
/local authority level		and monitoring • Various endorsements for approval at higher levels
Local authorities	Ward Executive officer	• Project monitoring • Monitoring Developments / activities in vicinity of the project
	Village Executive officer	• Project monitoring • Monitoring Developments / activities in vicinity of the project
Local community	Residents around project area	Watchdog to the environment and monitoring activities in their vicinity

CHAPTER FOUR: BASELINE CONDITIONS

4.1 4.1. PHYSICAL CHARACTERISTICS

4.1.1 Topography

Mkuranga District has two main physical features namely the coastal belt and the upland area. The project area where the proposed project will be located lies in the relatively flat land area; this area is characterized with loam sand soil, low water holding capacity, and moderate soil fertility.

4.2 GEOLOGY AND HYDROGEOLOGY

The proposed area is covered by geological formations of Neogene, Quaternary and recent deposits. The Neogene sediments consist of interceded sandy clayey and clayey sandy with places of pure sand, clay and limestone. The aquifers are expected to be sandy clay. However, boreholes drilled in the project area have been reported to be productive due to the presence of sand and sandy clay formations. But, some are reported to have slightly saline water.

From the climatic point of view, the area experience dual rainfall, shorter rains ("vuli") which starts in October to December, and long rains ("Masika") which covers the months of March to June. The rain ranges between 800mm to 1000mm per annum. Rainfall distribution however is not very reliable with the seasons, it is critical for agricultural production which is the mainstay of Mkuranga district economy and livelihood. Often short season ("vuli") experience more variation than long rain ("Masika") season. (Mkuranga District Profile, 2011)

The district is warm throughout the year, with an average temperature of 28ºC per annum. The climate is also influenced by the Southwest monsoon winds from April to October and Northeast monsoon winds between November and March. In reference with the project area the area where project will be located experience this type of climate although the area experiences the climatic condition resembling Dar es Salaam region since the project site is about 40 kilometres from Dar es Salaam region.

Humidity is around 96% in the mornings and 67% in the afternoons. The climate is also influenced by the south westerly monsoon winds from April to October and north-westerly monsoon winds between November and March.

4.3 AGRO- ECOLOGICAL ZONES

The district is divided into two agro-ecological zones based on land form as well as soil classification. The agro- ecological zones in Mkuranga District are cost belt and upland area, as shown in table 4.1 below;

Table 4.1: Agro – Ecological zones

Zone	Area covered	Physical feature
Coast belt	Shungubweni, division and parts of Kisiju and Mkuranga divisions including the project area	• Sandy soil low water holding capacity and high water table • Poor soil fertility
Upland area	Mkamba division and part of Mkuranga division	• Loam sandy soil • Suitable for cultivation

Source: Mkuranga District Council, 2011

4.4 FORESTRY

Forest cover in the District is about 51 km^2 (Approximately 51,000 Ha). There are 4 national forest reserves namely Masanganya forest reserve, Vikindu forest reserve, Malenda forest reserve and mangrove forests along the coast of Indian Ocean. Among these, natural forest reserves cover 8,000 Ha, while 43,000 Ha are general land forests. Tree species includes *brachystefia, Jubernadis, chlorophora, tectona grandis, newtonia* and *pterocarpos*. Forest products include timber, charcoal, firewood, catchments values, medicines etc.

The main causes for the forest cutting are: increasing demand for fuel wood; building and construction materials; inadequate awareness about the importance of forests conservation; and clearing for development of agriculture, and other activities.

In regard to the project site, the area is not surrounded by forests.

4.5 VEGETATION COVER

Vegetation cover including Coconut trees, Mango trees, Cashew nut trees, and different types of grasses are found in the proposed project site. Due to the nature of the development, there will be very minimal disturbances on existing vegetation cover.

4.6 SOCIO ECONOMIC CONDITIONS AND INFRASTRUCTURE

4.6.1 Population and Demographic Issues

According to 2012 population and housing census Mkuranga ward has a total number of 25,847 people whereas 12,256 are males and 13,591 are females. Generally Mkuranga District has a total of 187,428 inhabitants of whom 91,411 were males (48.7%) and 95,714 females (51.3%). Average population density is estimated to be 77 people per square kilometres. The district has an average growth rate of about 3.5% per annum.

Approximately 15,000 persons live in the coastal villager dependency on natural resources is high, with over 90% of the households dependent on natural resources for medicinal plants, fuel wood, and building poles. Agriculture is the principal economic activity, with over 90% of the households engaged in farming. The most common food crops are cassava, rice and beans. Major cash crops are cashew nuts, coconut, pineapple and oranges. The District is one of the largest producers of cashew nuts in Tanzania, with over 35,000 hectares under cultivation and close to 3 million trees.

4.6.2 Employment

Most of the people in Mkuranga are employed in the agricultural and industrial sector with about 60% of the population depending on crop farming, livestock keeping, forest products and business. Beside agriculture various activities are undertaken such as handcraft activities, carpentry, mat carpet and basket making which are wide spread and normally are taken as an off farm activities to supplement farm income. Other employment come from economic activities such as, trade (small scale), artisan such as mason in carpentry. However, most of population in the village is employed through formal and informal sector.

Currently there are number of factories and industries coming in Mkuranga area, therefore their people are employed in this sector however no actual figure of how many people are employed in these factories and industries.

4.6.3 Waste Management

4.6.3.1 Domestic waste water

In most areas of Mkuranga district there is no public sewerage system in place. Most of houses depend on pit latrines, although very few have modern onsite treatment systems like septic tanks. In addition, there is no elaborate storm water drainage system in the area. On the other hand, domestic waste water from the industrial premises such as workers' hostel, (i.e. water from the toilets, bathrooms and kitchen) will be discharged and collected into the constructed septic tanks coupled with soak way pit.

All liquid wastes water from factory will be collected in septic tanks at the site and shall be emptied and taken to the district disposal area whenever they are full.

4.6.3.2 Solid waste

Mkuranga area has no specified areas for dumping solid waste. Most people use compost sites i.e. small pits are dug and for dumping waste. When such pits get full, they are covered by soil and left to degrade (bio-degradation). The project site will produces different domestic solid wastes and industrial solid wastes including plastic bottles and plastic papers which will be recycled / re-used while other types will be collected and taken to district dumpsites.

4.6.4 Social Services

4.6.4.1 Water Services

The main water sources in area shallow wells, boreholes and rivers. Among these shallow wells saves as the main source in the area. The main use of water in the area is for industrial and for domestic consumption. Other uses include cattle, brick making and construction activities as well as for other activities such as small scale commercial activities. Generally, the District has about 522 shallow wells 131 boreholes, 84 rain water harvesting and 10 piped water supplies. So far about 49.3% of the district community gets clean water.

In the proposed factory, the main raw material for their product will be water which will basically obtained from existing borehole, therefore both factory water use and domestic water uses will be from this existing borehole. Also the population living nearby the project site depends water from boreholes

4.6.4.2 Health services

Most of people in Mkuranga in general depend on health services from the District Hospital. Accessibility to the district is good since the village is nearby National Hospital therefore it's easily go to get services. Generally the District has one district hospital, 2 health centres and 5 dispensaries in different areas. There are also few privately owned dispensaries that provide health services. There are several programmers initiated to combat diseases and improve public health. Such programmes include Malaria control, Integrated Management of Childhood Illness (IMCI), Intentional Trachoma initiative (ITI), STI/HIV/AIDS control. *Lymphatic Filariasis* Elimination, TB and Leprosy are among the programs conducted in the District.

Sometimes people from Dundani village and the area hosting project get their health services from Dar es Salaam city since distance is not far to district hospital or Muhimbili hospital for further treatments and medical examinations

4.6.4.3 Telecommunications

The major means for telecommunication in Mkuranga area and the area hosting project is through mobile telephone facilities provided by four major mobile phone service providing companies. These are Vodacom, Zantel, Airtel and Tigo. The settlements along the main roads are the best served especially those along the highway. Such services are also available in other parts of Mkuranga District. However, there is one small post office in the District which is available in Mkuranga town where TTCL services are also available.

4.6.4.4 Power supply

Firewood, charcoal and kerosene are widely used sources of energy for cooking and lighting in Mkuranga district. Electricity is available but covers a small area of the district especially those along the highway from Dar es Salaam to Mkuranga town only, there are seven villages served with electricity which are Kipala, Mpakani, Mwandege, Vikindu, Vikindu, Mwanambaya, Dundani and Mkuranga Villages. Therefore the area where the proposed project is located is among area where there is availability of the electrical power and the project area is well connected with TANESCO nation grid.

4.6.4.5 Transportation

The major means of transport to where the proposed project is located is by road. The project is located along the Dar es Salaam-Kilwa road; therefore the project site is accessible through this main road with 1 kilometre of street road branching left hand side from Dar es Salaam. Generally, movement of people and goods in Mkuranga District is based on roads transport. A total of 556 kilometres of roads exist in the district which can be classified into earth, gravel and tarmac.

4.7 ECONOMIC ACTIVITIES

4.7.1 Agriculture

Mkuranga District depends on Agriculture as the main stay of its economy. There are 2432 km^2 of total land. Out of this, 1934 km^2 which is about 79.5% of District area is arable land suitable for cultivation. Food crops grown include maize, cassava, paddy, huskers, sweet potatoes and leguminous, while cash crops cultivated include cashew nuts (main cash crop), coconuts and tropical fruits like oranges, pineapples, mangoes and passions.

Within Dundani village few of its community dealing with crop growing due to shortage of land contributed with rapid population expansion

4.8 LAND USES

In Mkuranga district Agriculture is the main land use pattern in the village followed is by animal grazing while other areas are used for human settlement and industrial land use. The existing land use close to the proposed project is industrial and factories along with sparsely populated human settlement.

CHAPTER FIVE: STAKEHOLDERS CONSULTATION AND PUBLIC PARTICIPATION

5.1 THE STAKEHOLDERS

Section 89 of the Environmental Management Act (EMA, 2004) provides directives on public participation and its importance in the EIA. Regulation 17 of the EIA and Audit Regulations (URT, 2005) provides further details and procedures for public participation in the EIA process. Stakeholders are all those people and institutions that have interest in the successful design, implementation and sustainability of the project. This includes those positively and negatively affected by the project. Stakeholder participation involves processes whereby all those with a stake in the outcome of the project actively participate in decisions on planning and management. They share information and knowledge and may contribute to the project, so as to enhance the success of the project and hence ultimately their own interests.

In this definition stakeholder is given a broad definition and would encompass different government agencies, beneficiaries and all other formal or informal groups associated with the project. The range of potential stakeholders to EIA will greatly depend on the definition of boundaries for that project but it is important to be 'inclusive' rather than 'exclusive.' The definition of the spatial and institutional boundaries for the proposed project in Mkuranga district indicate the dimensions of stakeholders who will be involved in the EIA study.

5.2 STAKEHOLDERS CONSULTED

Stakeholders for this proposed project include: government authorities, local authorities and neighbours around the proposed project area, which include the following:

- Village Leaders
- Ward leaders
- Mkuranga District Council
- Occupational Safety and Health Authority
- Ministry of Industry, Trade and Investment

5.3 IDENTIFICATION OF STAKEHOLDERS' CONCERNS

Stakeholders pointed out a number of issues and concerns. Raised issues were cross checked through discussions with involved individuals or groups. Details of stakeholders concerns recorded during consultation are as pointed out in Table 5.2 below

Table 5.1: Details of comments/views of consulted stakeholders

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
1. Angelina Kawanga 2. Renalda Damas	OSHA	Inspectors	The consultant had a meeting with two inspectors from OSHA and the following were raised: During this consultation, the emphasis was on the awareness creation and sensitization on occupational safety and health to employees as a primary prevention measure. OSHA officers referred to the Occupational Safety and Health Act No. 5 of 2003 which puts emphasis on safety at the work places so as to avoid accidents and other occupational related problems. This may occur due to lack of protective gears while working in hazardous areas within the factory premises for instance near machines which produce high temperature or area with high noise and dust emission. Sometimes the factory employs people without undertaking health check-up therefore sick employees may be the cause of accidents and other injuries. The following are the suggestions that were pointed out by OSHA inspectors. • For sustainable environmental health and safety regarding the proposed development: There must be Health and Safety

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
			Committee having members from different departments of the factory • Each staff must use Personal Protective equipment as per assigned job • There should be periodic health check-up of all employees in order to determine/examine if there are any health challenges to the employees. This should be done from the moment one is employed and then should be continued accordingly • There must be Occupational Health and Safety Management System and Policy which shows employer's commitment and his/her expectations from his/her employees for example to make sure all employees are aware on safety issues such as the importance of wearing protective gears, etc. • There should be periodic assessment of Occupational Safety and Health Reports to see if there is any complain concerning with the health and safety so that measures can be taken. • Education to workers is needed to raise awareness which is the primary preventive measure. • Premises should have a first aid kit and trained first aider to respond in case of accident • The factory should be registered by OSHA and acquire OSHA registration certificate followed by compliance certificate • The proponent of the proposed development should submit architectural, structural and electrical drawing to OSHA office for review and approval

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
Eng. P. K. Nyang`ombe	Ministry of Industries, Trade and Investment	Industrial Engineer	The consultant held discussion with Engineer P. K. Nyang`ombe regarding the proposed development, the following are his comments: • During operation the developer should ensure proper management of concrete waste. He advised that the rejected poles and other concrete wastes to be used for street road maintenance • The Material Safety data sheet for raw materials and equipment should be presented in the EIS; this will help in handling chemicals, materials and equipment. • Workers should be educated about the potential hazard associated with raw materials to be used in the proposed factory • Noise management during operation phase should be of acceptable limit, workers working in the area with noise should be equipped with PPE (especially ear plugs) • The project area will be paved therefore percolation of water will be limited. This will force rainwater either to move toward the nearby neighbour plots or to flood around the factory premises. Hence he advise the factory management to construct rainwater drainage system and direct them to public drainage system or nearby natural water channels • In a worst-case Scenario, the developer need to consider what will happen and possible outcomes that can reasonably be projected to occur in a given situation if any disaster occurs in the workplace and prepare a possible mitigation measures associated with the disaster

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
			• The boiler to be used in the factory need to meet the standards and to be operated by qualified persons. Also the type of fuel to be used by the boiler need to be well known with its specifications. • Dust management practices need to be established, since the factory will use cement, aggregates as a raw materials this may be a source of dust, therefore developer need to propose and implement the mitigation measures for dust reduction.
H. J. Basisi	Mkuranga District Council	District Environmental Management Officer	The team of three Staff from Mkuranga District Council accompanied by environmental consultant visited the project site before they giving their coments regarding the proposed development. Among the staff who visited the site is District Environmental Management Officer, and the following were his comments; • He had an opinion that the proposed development will have positive impacts to Mkuranga Villagers and the government at large, since it will create employment, increase government revenue, increased market for local products such as food from food vendors. • He also pointed some negative impacts which may be associated with the proposed development, among them is environmental pollutions and accidents. • The developer need to ensure proper management of wastes generated during operation phase. Solid wastes need to be properly collected, sorting before taken to dumping sites or to the certified waste collector. and concrete wastes should be used for

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
			street road maintenance • The developer need to ensure that workers are provided with PPEs • The facility will collect large amount of rainwater which will flow toward the Eastern side of the factory where there is no public rainwater drainage system therefore the factory management need to find alternative way for managing rainwater either by directing to nearby natural rainwater drainage or construct a rainwater collection reservoirs which is large enough to store expected runoff • During operation of the factory it is expected that many trucks will bring raw materials while other will come for products, therefore measures against road accidents need to be established in collaboration with TANROAD • The developer need to ensure that there is proper management of hydrocarbons, Waste oil and fuel must be collected properly. Machines and equipment repairing area need to be paved so as to avoid percolation of oil which may lead to ground water pollution • Raw material to be used for this project need to be of good quality to avoid products with low quality. Also products should meet specifications and standard as provided by TBS • The developer need to give employment priority to the local people
E. J. Nnko	Mkuranga District	Environmental Health Officer	Mr. Nnko is among the staff from Mkuranga District Office who visited the project site, in his opinion he pointed main three aspects which

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
	Council		are Health of their workers, Environmental Pollution Control and Product Quality Control. 1. **Health of the workers,** he advises the following: • Pre –medical check up to the new workers followed by periodic medical check-up after every 6 mouths • The developer need to provide Personal Protective Equipment to their workers and enforce their proper use • The factory need to have a health committee and Health policy • Pre work training to the workers should be provided • The developer need to install and uses modern machines and equipment with low human risk / accidents 2. **Environment Pollution Control Aspect**, he advised the following • The wastes recycling need to be given priority • Effluents need to meet a required standard before discharging • Waste collection points should be provided within a factory premises followed by sorting before disposal • Dust control practices should be adhere to avoid negative impacts associated with dust **3. Product Quality Control:** The production of product which does not meet standard / specification may lead to negative impacts such as loose of life,

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
			property and decline of local market. For example low quality electrical wire may cause electrical fault and causes fire outbreak which consequently lead to loose of life and properties
Phanuel Muniko	Mkuranga District Council	District Engineer	He is also among the Mkuranga District officers who visited the proposed factory, his major issue of concern was the management of storm water. He view that developer need to construct a water channel for the collection of all rainwater from their premises and direct them to the nearby natural drainage system rather than direct them to the neighbour plots.
Salehe S. Matitu Said S. Kindumbo Mohamed S. Ngota	Dundani Village	Village Leaders	The EIA expert visited the village office where he found three village leaders whereby he introduced the proposed development to the leaders. The area where the proposed development will be located is already accommodates another factories therefore all were well informed with the project site. All were happy with the invention of new factories and industries in their area because of social – economic advantages expected to be gained such as employment opportunities, increase of income to the government and individual, promotion of other business, etc. However, they had pointed out negative impacts associated with the development of factories in the area including accidents which cause temporary or permanent injury to staff, pollution, increases of social evils, etc. Therefore, they propose the following to be done during the course of the project.

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
			• Since the proposed development is owned by foreigners, United Republic of Tanzania roles and regulations should be followed accordingly • Based on their experience, they complained on other investors who owns factories and industries in Dundani village that do not cooperate with the village leaders, therefore they advise this investor to visit the village office before project take off. • The pre-orientation of new machines and equipment to the workers should be provided to avoid accidents which may occur due to lack of knowledge of how to operate them. • Workers need to be registered with National Health Insurance Fund. • Social responsibility: the developer is requested to join hands to facilitate construction of borehole to be used as a source of water supply • The developer needs to provide PPE to workers • They also advise the developer to avoid open burning of wastes to avoid air pollution
Juma S. Difa	Mkuranga Ward	Ward Executive Officer (WEO)	The consultant held a discussion with WEO officer, and concerns raised based on four aspects: Environmental Management Aspect, Rules and Regulations aspect, Workers Right aspects, and Cooperation Aspect; **1. Environmental Management Aspect.** • WEO recommend that the proposed development should ensure

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
			that wastes to be produced in their premise will be well collected and disposed in a designated dumping site and he advised to avoid open burning. • Normally production of concrete electrical poles produces dust therefore proper dust management need to be proposed and implemented • Solid wastes associated with concretes need to be deposited in a proper way or to be re-use for street road maintenance. • He also advised on proper management of storm water and domestic waste water. He advice that the factory to direct storm water to the public drainage system or nearby natural rainwater drainage system **2. Rules and Regulation Aspect** • He advised the factory management to ensure that the local rules and regulations are abided. • He emphasis that the developer should produce only commodities that the company registered to produced, if they will need to produce other product they must secure permit from respective authorities **3. Workers aspects.** The developer need to ensure the following for their workers • Personal Protective gears should be provided to the workers • The salary should consider current value of Tanzanian Shillings • Employment opportunities to be given to residents

NAME OF STAKEHOLDER	INSTITUTION	POSITION	STAKEHOLDER'S VIEWS AND CONCERNS
			4. Cooperation Aspect: • WEO say that in Mkuranga there are many factories and industries owned by Chines and other foreigners investors, but when government officers want to visit or inspect the factory premises they may / may not allowed to enter, therefore, he is not expecting this to happen to this investor. • He also advised the developer to cooperate in social issues and social – development projects in the Mkuranga

Table 5.2: EIA Recommendations for Issued by Stakeholders

CONCERN/ISSUE	EIA RECOMMENDATIONS	SECTION
Occupational safety and health risks to employees	• Each staff shall use Personal Protective equipment as per assigned job • There should be periodic health check-up of all employees • Awareness creation and training on occupational risks so as to avoid them	Section 7.2.1 and 7.3.3
Pollution of environment from Effluent mismanagement	• Regular maintenance of the drainage system • Regular assessment of infrastructure (septic tank and soak away pit) • Emptying of full septic tanks once they are full	Section 7.2.2
Environmental pollution from mismanagement of solid waste	• proper collection and disposal of domestic and office solid waste at a designated disposal site in the district • Separation of wastes should be done	Section 7.2.5
Degradation from smoke and air pollutants	• Installation of wet scrubber systems • high rise smoke stack of height not less than 125 feet above the roof top of the building	Section 7.2.4
Impairment of environment from dust generation	• Each staff shall use Personal Protective equipment as per assigned job • Use of water spraying on dusty surfaces to suppress dust	Section 7.3.3

CHAPTER SIX: ASSESSMENT OF IMPACTS AND IDENTIFICATION OF ALTERNATIVES

6.1 INTRODUCTION

This chapter seeks to identify and analyse environmental impacts. Identification of the impacts is based on the following:-

- Issues of concerns raised at various stakeholder consultation/interview meetings
- Expert observations/experiences and judgement

The identified impacts are also based on project phases namely:- site selection, design, installation, operation as well as decommissioning phase.

6.2 SITE SELECTION PHASE

6.2.1 Current land uses of the site

The land on which the project will be located is an industrial area. At the proposed site, there are well built structures in a fenced compound. The project site is among the well planned industrial plots with a right of occupancy for 99 years.

6.3 DESIGN PHASE

6.3.1 Choice of Materials and Technologies

Given the fact that electrical cable and engineering factory involves utilization of raw materials and equipment, the choice of materials to be used as well as technology may lead to risks and occupational safety impacts to both workers and visitors.

6.3.2 Inadequacy of the designs

Ventilation is one of the most fundamental safety precautions that need to be incorporated in the design. However, without clear guidance as to how adequate ventilation is ensured may place people at risk. The design of the

factory is expected to control the heat provided that the extraction fans will be running.

6.3.3 Management of waste

The project is not expected to produce significant liquid waste from the production line although little water from cooling machine will be produced and will be recycled. Sewage from toilets and wash water from production building will be disposed through soak away pits that had been constructed in the project site. Solid waste that may be generated in the factory premises such as wastes from canteen will be disposed through the use of district solid waste disposal facilities. .

The design as well as the actual situation at the project site show that there is no potential impact related to waste management but should this happen, the impact may be termed as negative, direct, long term and of high significance.

6.4 MOBILIZATION/ PREPARATION/ CONSTRUCTION PHASE

Since the installation of machines and equipment will be done in existing warehouses, impacts associated to mobilization/preparation and construction phases are almost negligible.

6.5 OPERATION PHASE

6.5.1 Occupational health Hazards and risks

Manufacturing of electric cables and concrete poles does not involve emissions of any hazardous compound but may be associated with hazards and risks like fire accident, inhalation of fumes emanating from furnace, dehydration due to excessive heat and dust emission and injuries associated with production processes. The hazards might also be associated with the work practice, equipment type, level of safety training of the workers and materials used. Control of nuisance dust and personal exposure may be done by the use of respirators. All personnel in the production area will be provided with safety gears including over coats, gloves and dust masks.

This is due to the fact that the nature of the production process exposes workers to such risks and hazards.

6.5.2 Contamination of environment due to inadequacies in management of effluent

Overflowing of liquid waste from toilets and poor design and maintenance of drainage systems may cause contamination of environment. Wash water during cleaning of factory hall and spillages of oils during maintenance of machinery is another source of waste water that needs special attention. Inadequate storm water management may also result in blockage of drainage system, which could in turn result in flooding of the project site or neighbouring areas. Improper management of such effluent may lead to environmental pollution.

6.5.3 Impacts due to inadequacies in handling of chemicals in the factory

Most of the environmental problems associated with project activities and actions should, under normal circumstances, be addressed at the design stage of the project. However, there are those impacts due to poor handling of chemicals during operations. Such problems, which could arise during operations, may be due to negligence, lack of maintenance, poor management and lack of monitoring aspects of the project systems.

6.5.4 Impairment of environmental quality due to solid waste

Solid wastes to be produced from electrical equipment manufacturing process will all be recycled within the factory. Decomposable waste such as papers will be collected within the site using waste collection points waiting to be taken to district dumpsite while non-decomposable wastes of value like plastic bottles, pieces of wires, plastic bags, etc. will be collected and sent to certified vendors for recycling. Other decomposed wastes such as food remains will be buried and turned to manure for gardening. In contrary to these proposed waste management, the environment will be polluted as a result of improper solid waste management.

6.5.5 Spreading of HIV and other STIs in the area

Establishment of the electrical equipment manufacturing factory in the area will add to the already existing influx of people from various places in search for jobs and other opportunities that come with area development. The project may facilitate interaction of people of different sex which may lead to sexual relationships and eventually spreading of HIV and other Sexually Transmitted Infections.

6.5.6 Enhanced income, employment opportunities and local taxes

One of the positive impacts of the proposed electrical accessories manufacturing factory is the availability of employment opportunity to the skilled and unskilled labour in Mkuranga and enhancement of local business that is likely to boost other investments, and enhance income to the community and government through taxes that will strengthen economic development in Mkuranga.

6.5.7 Cumulative impacts

The existing factory operations at Dundani village are said to be a source of disturbance to the neighbouring residents due to smoke, noise and vibration which is typical of industrial areas. The establishment of cable and electrical engineering plant within the same premise may add on the existing impacts.

6.5.8 Residual Impacts

Residual impacts are those that remain significant following the application of mitigation measures. They are derived by comparing the predicted impact to the best effect that the mitigation measures can have in alleviating the adverse effect that the identified impact can have on the environment. Given the size of the factory its location and most importantly the mitigation measures proposed, there are no residual impacts expected from the cable and electrical engineering plant.

6.6 DECOMMISSIONING PHASE

The factory infrastructure might remain in operation for not less than 50 years provided maintenance of the facility is given due attention. However, even if maintenance is done as it should, there will come a time when the facilities may be dilapidated and deemed unsuitable for the proposed industrial operations. This is what is meant by decommissioning phase. Cessation of operations of the proposed factory may also set in anytime due to financial challenges, high operating costs, decision of the investor to change the line of business etc. If this happens environmental as well as socio-economic impacts may occur.

6.6.1 Environmental impacts related to decommissioning

6.6.1.1 Dust and noise Pollution from demolition activities

In closure of the project Everwell Cable and Engineering Company Ltd may decide to demolish the structures. Waste, dust and noise are expected from demolition works of the structures.

6.6.1.2 Contamination and impaired Environment

In the event of future rehabilitations, upgrading or decommissioning, the plant and associated facilities may need to be demolished thus necessitating disposal of demolished waste. Haphazard disposal may cause contamination/impaired quality of the receiving environment such as land.

6.6.1.3 Occupational health and safety impacts to workers

During decommissioning of the project there are potentials of health impacts due to accidents and dust emission to workers doing the demolition of structures and restoration of environment into its original conditions.

6.6.2 Socio-economic impacts related to decommissioning

6.6.2.1 Loss of employment to workers

If for whatever reason the project is closed down, the people employed by the project will lose their jobs. This will have significant adverse impact to these people and their dependants. Other groups of people who will be indirectly dependent on the project, such as middlemen who market and sell the product to users, may lose income.

6.7 ASSESSMENT OF IMPACTS

Table 6.5 presents summary of analysis of identified environmental impacts, the assessment is based on the following criteria:

Nature of impacts (positive/negative)

Magnitude/significance i.e. depending on the severity

- Major (if severe)
- Minor (if not severe)

- Wide scale (if it affects large areas)
- Local scale (if it affects only a locality)

Sequence (i.e depending on reach)

- Direct (if there is a direct impacts)
- Indirect (if there are indirect impacts)

Duration/time frame

- Long duration/time (if the impacts will persist for more than 5 years)
- Medium duration/time (if the impacts will persist for 1-5 years)
- Short duration (if the impacts will persist for a couple of months/weeks/days

Reversibility

- Reversible (if impacts can be mitigated)

Irreversible (if impact cannot be mitigated)

Table 6.1: Summary of assessment of identified environmental impacts

Phase	Key activities	Identified environmental. impacts	Analysis of environmental Impacts												
			Nature of impacts		Magnitude/significance				Sequence		Duration/term			reversibility	
			+ve	-ve	high	moderate	wide	local	direct	indirect	long	mid	short	reversible	irreversible
OPERATION PHASE	Normal industrial activities involving workers	Injuries from Occupational health Hazards and risks		X	X			X	X		X			X	
	Waste management	Contamination of environment from mismanagement of effluent		X	X		X		X		X			X	
	Chemicals handling	Pollution from chemicals mismanagement		x		x	x		x		x			x	
	Disposal of wastes	Environmental degradation due to mismanagement of solid wastes		X	X		X		X		X			X	
	Day to day running of factory	Environmental degradation from smoke emission		X		X		X	X		X			X	

Phase	Key activities	Identified environmental. impacts	Analysis of environmental Impacts												
			Nature of impacts		Magnitude/significance				Sequence		Duration/term			reversibility	
			+ve	-ve	high	moderate	wide	local	direct	indirect	long	mid	short	reversible	irreversible
	Day to day running of factory	Environmental degradation from noise and vibration		X		X		X	X		X			X	
	Interaction of workers	Spreading of HIV/AIDS and other STIs		X	X		X		X	X	X			X	
	Storm water management issues	Degradation of Environment due to Liquid Waste		X	X			X	X		X			X	
Decommission	Demolition of structures	Injuries and other Occupational health and safety impacts to workers		X	X			X	X				X	X	
	Closure of factory	Loss of employment to workers		X	X			X	X		X			X	
	Waste management	Loss of aesthetics		X		X		X	X				X	X	
	Demolition works	Dust emission		X		X		X	X				X	X	
	Demolition works	Noise pollution		X		X		X	X				X	X	

6.8 EVALUATION OF IDENTIFIED ENVIRONMENTAL AND SOCIAL IMPACTS

Evaluation of impacts is based on criteria set out in Tables 6.2, 6.3 and 6.4.

Table 6.2 Methodology/criteria for impact evaluation

Criterion	Description	Possible Results		
		Term	Description	Score
Magnitude of the Impact	An indication of the severity of the impact, either positive or negative.	Very High	Extreme effect – where natural, cultural or social functions or processes permanently cease.	5
		High	Severe effect – where natural, cultural or social functions are altered to the extent that they temporarily cease.	4
		Moderate	Moderate effect – the affected environment is altered but natural, cultural or social functions continue, albeit in a modified way.	3
		Low	Minimal effect – affects the environment in such way that natural, cultural or social functions and processes are not affected.	2
		Very Low	Minimal or negligible effect	1
		Unknown	Magnitude of the impact unknown.	0
Scale of the Impact	An indication of geographical extent of the impact	National	Affects the resources of the country	5
		Regional	Affects the resources of the region	4
		District	Affects the resources of the district	3
		Local	Affects the project area and surrounding community	2
		Site – specific	Localized, confined within the licence area.	1
		Unknown	Extent of the impact unknown	0
Duration of the Impact	An indication of the duration or time over which the impact will be experienced.	Permanent	Will remain permanently	5
		Long term	Extends into the post- closure phase, but not permanently	4
		Medium term	During the operational life of the project	3
		Short term	Shorter than the operational life of the project	2
		Transient	Very short duration	1
		Unknown	Duration of the impact is unknown	0

Table 6.3 Methodology/criteria for assessment of probabilities

Criterion	Description	Possible Results			
		Term	Description		Score
			Discrete Event	Prolonged Exposure from a single activity or event	
Exposure to	An indication	Very High	Daily or continuous	Exposure in perpetuity	5

Impact	of the frequency of the activity that may cause the impact, or the continuity of the exposure.	High	Weekly/once per week	Continuous exposure into closure or post-closure phases	4
		Moderate	Monthly/once per month	Continuous exposure during renovation and operations phases	3
		Low	Bi-annually	Continuous exposure throughout one phase	2
		Very low	Annually or less frequently	Prolonged exposure yet finishes before end of a phase	1
		Unknown	Frequently of activity unknown	Continuity of exposure unknown	0
Probability of the Occurrence	An assessment of the degree of certainty associated with a potential impact	Highly likely	Very likely or certain to occur		5
		Likely	Likely to occur		4
		Possible	May possibly occur		3
		Unlikely	Unlikely to occur		2
		Highly Unlikely	Very unlikely to occur, or almost impossible		1
		Unknown	Probability of the occurrence unknown		0

Table 6.4 Methodology for analysis of impacts duration

Consequence	Magnitude + Scale + Duration	3-4	5-7	8-11	12-14	15
		Very Low	Low	Moderate	High	Very High
Likelihood	Exposure + Probability	2-3	4-5	6-7	8-9	10
		Very Low	Low	Moderate	High	Very High

Table 6.5 Summary of evaluation of impacts

S/N	Environmental Impacts	PHASES	
		Operation Phase	Demolition Phase
1.0	**Positive Impacts**		
1.1	Skills and knowledge transfer to employees	+2	0
1.2	Benefit to local producers, suppliers of materials	+1	0
1.3	Enhanced income, employment opportunities and local business	+2	0
1.4	Increase of revenue collection as taxes and levies to Government	+2	0
2.0	**Negative Impacts**		
2.1	Injuries and occupational health Hazards and risks to workers	-3	0
2.2	Air pollution due to dust emission	-2	0
2.3	Noise pollution due to running of equipment	-2	0
2.4	Degradation due to poor management of solid wastes	-3	0
2.5	Environmental Pollution due to effluent waste mismanagement(industrial effluent)	-3	0
2.6	Environmental Pollution due to liquid waste mismanagement(storm water)	-3	0
2.7	Spreading of HIV and other STIs	-2	0
2.8	Loss due to fire accidents	-3	0
2. 9	Loss of aesthetic value due to Abandonment of infrastructure	0	-3
2.10	Noise Pollution from demolition activities	0	-2
2.11	Dust emission from demolition activities	0	-2
2.12	Loss of employment to workers	0	-3

6.9 CONSIDERATION OF PROJECT ALTERNATIVES

6.9.1 Alternative site

The project proponent had no alternative site suitable for establishment of the cables and electrical engineering plant. Therefore no consideration of this alternative site was done.

6.9.2 Alternative factory structure design

There were no alternative designs or structures for consideration as there were existing building structures within Everwell Cable and Engineering Company Ltd premises earmarked for the project.

6.9.3 Alternatives of Technology in the cable and electrical engineering factory

Production of electrical equipment will use modern technologies and machines. All these machines will use electrical power to run activities. Machines to be used include high voltage cables manufacturing machines, aluminium conductor steel reinforced machines, plastics extruder machines and equipment, PVC insulating machines, PVC electrical conduit extrusion production line, UPVC electrical conduit pipe extruder machine, plastic extruder heater, PVC electrical fittings machines, PVC pipe socket making machine, concrete mixer machines for mixing a concrete and crane for lifting the poles. The developer does not have alternative technology currently since all machines and technologies mentioned above are suitable for his activities although there might be adoption of addition new technologies when needed.

6.9.4 Options of Wastewater Management System

Use of oxidation ponds

Oxidation ponds are natural systems that can treat substantial amounts of effluent provided that the source of such wastewater is free from high doses of chemicals. This system requires large land area but more affordable in terms of maintenance costs. Disadvantage of oxidation system is foul smell in case of disruption of natural biodegradation of organic matter.

Use of septic tank and soak away pits

Septic tanks and soak away pits are regarded as primary treatment systems for small quantities of waste water. They are usually installed in situations where there are options for secondary treatment of effluent. These systems are suitable in areas with non-porous soils with low water table and are associated with high operation and maintenance costs.

Given the reasonable quantity of wastewater that will be generated from the factory wash water, septic tank system is considered to be the best available option for treating wastewater from the Everwell Cable and engineering factory.

6.9.5 No project alternative

No project alternative may have to mean no Everwell cable and engineering factory. The National Investment Policy which promotes the growth of investments states clearly that investments that utilize strategic resources to create employment to local citizens should be encouraged. Abandoning this project which has great potential of boosting incomes of local communities as well as the economy of the nation is definitely not a wiser option.

CHAPTER SEVEN: MITIGATION MEASURES

Chapter six has identified the potential impacts and their significance. This chapter provides a summary of possible mitigation measures of those impacts which are considered of moderate to high significance.

7.1 MOBILIZATION/ PREPARATION PHASE

There are no impacts identified related to mobilization and preparation as there is no construction involved in establishment of the project

7.2 OPERATION PHASE

7.2.1 Occupational Hazards and risks

Some mitigation measures to deal with the occupational hazards and risks include:

- Each staff shall use Personal Protective equipment as per assigned job
- There shall be periodic health check-up of all employees
- Providing training in relevant safety measures information to workers.
- Posting sign posters in relevant areas to forewarn workers on safely and danger issues.
- Establishing system of monitoring of number, frequency and type of incidences related to industrial operation.
- Enforcing a rotation system such that workers are not exposed to hazards conditions for long period time
- Premises should have a first aid kit and trained first aider to respond in case of accident

7.2.2 Pollution of environment due to effluent mismanagement

All wastewater from wash rooms will be channelled into septic tanks and soak away pits. Additionally, the following will be done:

- Regular maintenance of the drainage system
- Regular assessment of infrastructure (septic tank and soak away pit)
- Emptying of full septic tanks once they are full

7.2.3 Impacts due to inadequacies in handling of chemicals during operation of the factory

These impacts may be mitigated through the following measures:

- Provide regular training on management of chemicals to technical personnel,

- Recruit staff with requisite skills
- Institute proper supervision protocol,
- Ensure that adequate resource are available particularly money for running costs, buying protective equipment, maintenance, utilities etc.,

7.2.4 Air pollution from emissions generating equipment

In order to offset impacts that may cause air population near the Everwell Electrical factory and neighbouring areas, wet scrubber systems shall be installed in addition to high rise smoke stack of height not less than 125 feet above the roof top of the building.

7.2.5 Impairment of environmental quality due to domestic solid waste

Mitigation measures for this impact include:

- proper collection and disposal of domestic and office solid waste into a designated dump site in the district
- Separation of wastes should be done

7.2.6 Noise and vibration nuisance

As a matter of fact, electrical engineering factory as a process does not employ machines that create noise and vibration. However, trucks loaded with raw materials may occasionally cause noise and some vibration as they pass. Mitigation of this impact may be achieved by ensuring that movement of trucks that cause loud noise and vibration are controlled such that they operate during the day time only.

7.2.7 Spreading of HIV and other STIs in the District

Measures for mitigation of this impact include:

- Raising awareness of the dangers of the HIV/AIDS to workers and the community through seminars
- Support voluntary HIV counselling and testing by carrying out periodic voluntary testing of workers and surrounding communities

7.2.8 Cumulative impacts

In order to minimize cumulative effects of impacts from the existing plants, the mitigation will include ensuring that all previous pollution sources resulting from defects or inadequacies in operations of existing plants are dealt with prior to establishment of the new plant.

7.3 DECOMMISSIONING PHASE

7.3.1 Contamination and impaired Environment

To mitigate the impact during demolition, the contractor and Everwell Cable and Electrical Engineering Company Ltd shall ensure that proper decommissioning procedures are followed.

7.3.2 Loss of Employment

The major impact that will result from the project decommissioning will be loss of jobs. In order to minimize the impacts that may result from this eventuality, the following measures will be taken:

- Prepare workers for forced retirement by providing skills for self-employment, and wise investment of the retirement benefits.
- Ensure that all employees are members of Social Security schemes.
- Consider redeploying employees in other companies

7.3.3 Occupational health and safety impacts during decommissioning

Impacts due to decommissioning may be mitigated through the following measures:

- Each staff shall use Personal Protective equipment as per assigned job
- Use of water spraying on dusty surfaces to suppress dust

7.4 ENHANCEMENT MEASURES OF POSITIVE IMPACTS

7.4.1 Income, skills and knowledge increase to local labourers

In order to enhance this positive impact, the proponent shall take deliberate measures to employ human labour in carrying out all activities during operation that may be done without machines while maintaining high level of efficiency and necessary safety. This is meant to increase the number of people that will benefit through wages, skills and knowledge transfer during the project life span.

7.4.2 Enhanced income, employment opportunities and local business

To enhance this positive impact, the proponent shall make deliberate effort to employ Tanzanians to work at the factory. Also, efforts shall be made to pay workers handsomely so as to improve their livelihood. Outsourcing of services needed at the factory shall be procured locally to benefit the local community around the project area.

CHAPTER EIGHT: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

This chapter describes the environmental and social management plan (ESMP) for the electrical engineering factory. The ESMP applies to, and will be implemented throughout all phases of the Project except construction.

Everwell Cable and Electrical engineering Company Ltd shall be responsible for overall implementation of the ESMP and will establish an organizational structure with clearly defined lines of authority, areas of responsibility and accountability. Assigned staff at the factory shall be responsible for day to day follow ups (supervision and liaising with key stakeholders). The assigned staff's primary responsibilities will be to ensure that all project activities comply with applicable environmental regulations and that ESMP commitments are honoured. Also the proponent shall ensure that qualified expertise is provided in a coordinated manner.

The estimated costs for implementing the mitigation measures are just indicative. Appropriate bills of quantities shall clearly give the actual figures. In any case the consultant used informed judgment to come up with these figures. The summary of the key issues of the Everwell Cable and Engineering factory and their management are shown in Table 8.1

Table 8.1: Environmental and Social Management Plan for the Copper Recycling Factory

Phase	Impact	Management Measure	Target level/ Standard	Responsibility	Costs TShs
OPERATION	Injuries from Occupational health and safety hazards during production	• demonstrate compliance to environmental standards • continue providing fire fighting equipment and first aid kits at work place • Personnel working in high temperature and high humidity areas take frequent breaks away from the areas	Zero accidents	• EVERWELL • OSHA • NEMC	5,000,000
	Impacts due Inadequacies in handling of chemicals during operation of the factory	• Provide regular training on management of chemicals to technical personnel, • Recruit staff with requisite skills • Institute proper supervision protocol, • Ensure that adequate resource are available particularly money for running costs, buying protective equipment, maintenance, utilities etc.,	As minimum as possible	EVERWELL	2,000,000 per year
	Impairment of environmental quality due to domestic solid waste	• Collection and disposal of solid waste into a designated dump site in the district • Waste sorting at collection points	None	• EVERWELL • District council	1,000,000 per year

Phase	Impact	Management Measure	Target level/ Standard	Responsibility	Costs TShs
	Spreading of HIV and other STIs in the District	• Raising awareness of the dangers of the HIV/AIDS to workers and communities through seminars • Support voluntary HIV counselling and testing by carrying out periodic voluntary testing of worker	None	• EVERWELL • District Council	1,000,000 per year
	Air pollution from emissions generating equipment	• Installation of pollution control equipment i.e. wet scrubber and bag house • Installation of high rise smoke stack	As per limit set by TZS 845:2005	• EVERWELL • NEMC	2,000,000 Per year
	Contamination of general environment due to effluent mismanagement	• Ensuring recycling of water in electrolyte • Regular maintenance of the waste treatment system	As per limit set by TZS: 344:1989	• EVERWELL • District Council • NEMC	2,000,000 per year
	Nuisance due to vibration and noise	• Repair and maintenance of machines • Restricting production during the day	As per TZS 932:2006	• EVERWELL • OSHA • NEMC	2,000,000 per year
DECOMMISSIONING	Injuries from Occupational health and safety hazards during production	• demonstrate compliance to environmental standards • provide personal protective equipment	Zero accidents	• EVERWELL • OSHA • NEMC •	2,000,000
	Contamination and impaired Environment from dust	Supress dust by spraying of water on dusty surfaces	As per limit set by TZS 845:2005	• EVERWELL • NEMC	3,000,000

Phase	Impact	Management Measure	Target level/ Standard	Responsibility	Costs TShs
	Loss of employment	• Prepare the workers for forced retirement by providing skills for self-employment, and wise investment of the retirement benefits. • Ensure that all employees are members of the Social Security schemes. • Consider redeploying employees in other companies	The retrenchment to go as smoothly as possible	EVERWELL	20,000,000 per year

CHAPTER NINE: ENVIRONMENTAL AND SOCIAL MONITOING PLAN

Environmental and social monitoring plan provides the application of ESMP as well as dealing with unforeseen issues which need to be mitigated. Details on parameters to be monitored have been considered along with costs estimates and responsible institution(s).

The Environmental and Socio monitoring Plan of the proposed factory are shown in the table 9.1

Table 9.1: Environmental and Social Monitoring Plan for the Electrical Engineering factory

Phase	Impact	Parameter to be monitored	Monitoring Frequency	Monitoring Area	Measurement Unit	Target Level/ Standard	Responsibility	Annual Cost Tsh
OPERATION	Occupational health and safety hazards during production	Temperature intensity per hour per area Air quality	Monthly	Production area	NA	Zero health impact	EVERWELL OSHA NEMC	5,000,000
	Impairment of environmental quality due to domestic solid waste	Number of Collection per week and point of disposal	Once every week	Staff Quarters	Number	Collection to be done as planned	EVERWELL NEMC	1,000,000
	Spreading of HIV and other STIs in the area	New cases of HIV infected staff	Thrice per year	All factory staff	Number of cases	Minimized to zero	EVERWELL NGOs dealing with HIV/AIDS	1,000,000
	Health hazards and degradation of environment due to inadequacies in handling of chemicals	Adherence to requirements as per materials safety data sheet Application of proper formula during mixing Availability of protective gears	Once per every three months	Settling tank	Mg/l	As per material safety data sheet	EVERWELL	1,000,000
	Air pollution from emissions generating equipment,	CO_2, CO	Once per every three months	Furnace area	ppm	As per limit set by TZS 845:2005	EVERWELL and NEMC	1,000,000

Phase	Impact	Parameter to be monitored	Monitoring Frequency	Monitoring Area	Measurement Unit	Target Level/ Standard	Responsibility	Annual Cost Tsh
	Environmental degradation due to solid waste	Amount of solid waste disposed	Once per every three months	Factory premises	kg	All waste disposed of at designated dump	EVERWELL NEMC	2,000,000
Decommissioning	Safety Hazards as a result of abandoned infrastructure	Buildings, machinery left on site	Six months after decommissioning	Project site	None	All physical structure removed	EVERWELL and NEMC	1,000,000

CHAPTER TEN: COST BENEFIT ANALYSIS

10.1 FINANCIAL COST BENEFIT ANALYSIS

Cost benefit analysis is normally done in the framework of feasibility study. The aim of cost-benefit analysis is to inform decision makers on:

- the costs of alternative ways of delivering a service;
- estimates of the size of a project;
- whether a project should be undertaken; and/or
- whether a current project should be continued, changed or ceased
- judging project profitability and sustainability

The costs may include capital expenditures, operating and maintenance costs, staff costs, materials, research and development, opportunity costs and environmental health and other social costs

Benefits may include better, more cost-effective service delivery, the avoided costs being the costs of the existing or conventional service delivery option, additional revenues generated, productivity, savings, environmental health and other social benefits.

Before the project is approved by the investor it has to pass the net present value test. The costs and benefits were used to calculate the net present value of the Cable and electrical engineering factory project. According to the feasibility study conducted by Everwell Cable and Engineering Company Ltd in 2010, the net present value of the project is positive and the project is considered economically feasible. The developer analysed scenarios under different assumptions. The results of these calculations led to judgements on the economic position of the project under changing states of affairs. As these calculations are constantly adjusted to the present situation, this leads to a fair knowledge on the status quo of the investment

10.1.1 Quantifiable and non-quantifiable benefits to the communities

The benefit to the communities may be direct or indirect. One of the benefits can be employment opportunities (within the project and outside). Also contribution to government revenue is a quantifiable direct benefit. However, the benefits accrued from such taxes e.g. in building of roads, schools, hospitals etc. may not be apparent to the communities as such benefits may be considered non-quantifiable.

The company is expected to contribute to social development projects such as road improvement, schools and health centres construction as part of its corporate social responsibility program. This may be considered as non-quantifiable benefits of the investment.

10.1.2 Quantifiable and Non quantifiable benefits to the Government

As already mentioned above, the Government will directly benefit from tax gains from the investment. Additionally, the factory project is bound to enhance availability of factory products which are needed for domestic application. This may in turn lead to reduced forex outflow which would have otherwise been used to import such items into the country. The government is striving to improve the living conditions of the people, this include having reliable materials locally made for domestic and industrial development.

10.2 ENVIRONMENTAL COST BENEFIT ANALYSIS

Environmental cost benefit analysis is assessed in terms of the negative versus positive analysis. Furthermore, the analysis is considering whether the impacts can be ameliorated and the costs of mitigating the impacts are reasonable. As it has been demonstrated in Chapter Six (6), the benefits of the project, in terms of financial and social benefit are substantial, the environmental impacts can be mitigated (chapter Seven (7) and the financial resources needed to mitigate the impacts are relatively reasonable compared to the actual capital investment. The EIA study revealed that there is potential for pollution of air and the general environment due to emissions from the factory. However, installation of after-burner equipment is a sure way of minimizing air pollution. Other environmental impacts related to the electrical cable and poles factory are of the nature and magnitude that can be ameliorated.

10.3 SOCIAL ECONOMIC COST BENEFIT ANALYSIS

Overall, the project activities will contribute towards creation of employment opportunities for Tanzanians hence contributing towards poverty eradication activities. As it can be seen in the impact analysis, there are no serious negative social economic impacts apart from spreading of HIV and Sexually Transmitted Infections due to increased number of people in the area. It can therefore be deduced that the social benefits outweigh the social costs that are anticipated.

CHAPTER ELEVEN: DECOMMISSIONING PLAN

11.1 PRELIMINARY DECOMMISSIONING PLAN

The life span of the project is expected to be 30 years. This is a preliminary decommissioning plan. It establishes feasible decommissioning schemes that can be accomplished without undue risk to the health and safety of the public, decommissioning personnel, without adverse effects on the environment, and within established guidelines and limits of the appropriate regulatory agencies. This preliminary decommissioning plan will serve the purpose of ensuring that the decommissioning and ultimate disposition of a facility is considered during the initial design and construction of the facility. The preliminary plan will remain a "living document," and revisions will be made throughout the operational life of the plant. It must be reviewed periodically and revised to reflect any changes in facility construction or operation that might affect decommissioning. Prior to the initiation of actual decommissioning activities for the facility, a detailed final disposition plan will be prepared

11.2 PROJECT REMOVAL METHODOLOGY AND SCHEDULE

Everwell Cable and Electrical Engineering Company Ltd shall fund and implement all aspects of project decommissioning, including but not limited to all engineering, environmental assessment, permitting, construction, and mitigation activities associated with the removal of the factory in accordance with this Plan and the Settlement Agreement, and mitigation of Project removal impacts on site. The proponent shall monitor environmental impacts during and after Project removal to respond to defined events during the monitoring phase.

Everwell Cable and Electrical Engineering Company Ltd shall remove the factory and ancillary structures safely and in a manner that:

- minimizes environmental impacts;
- restores the site to a condition suitable for multiple use; and
- pay all dues (workers, government, suppliers etc.).

Project removal will begin six months after closure and continue for six months. Within the six months from closure, Everwell Cable and Electrical Engineering Company Company Ltd will do an inventory of all components that need to be removed and/or disposed. This inventory will include building structures to be demolished, machinery to

be disposed of. Also mode of disposal will have to be finalized. This information will assist in the preparation of the final decommissioning plan for approval by NEMC.

After the approval of the decommissioning plan, insulation materials such as asbestos and fibres shall be removed first to avoid contamination of environment followed by metal parts within the first month (this is important to ensure that they are not vandalized). The second month of the decommissioning will be used to remove concrete structures. Debris will be used as road fills for earth roads.

Any hazardous material (for example used batteries, tyres, acids etc.) discovered during decommissioning will be cleaned up and disposed of in accordance with the regulations. All disturbed areas will be landscaped and re-vegetated using indigenous trees and vegetation species.

CHAPTER TWELVE: SUMMARY AND CONCLUSIONS

12.1 SUMMARY

The scoping exercise and Impact Assessment have identified a number of issues pertaining to the proposed Everwell Cable and Engineering factory. The issues/impacts have been described and assessed in detail to gain adequate understanding of possible environmental effects of the proposed project at all stages of project development. The Environmental Management plan provides a way forward for implementation of the proposed mitigation measures. The Environmental and Social Monitoring Plan shows what has to be monitored during all phases. The estimated costs for implementing the mitigation measures as well as monitoring are just indicative based on consultant's informed judgment.

12.2 CONCLUSIONS

While a number of environmental impacts have been identified and assessed accordingly, none of them are considered to be too severe to make their amelioration impossible. Mitigation measures and all engineering solutions proposed are sufficient to warrant planning, design and installation of the proposed Electrical cable and poles factory in Dundani village, Mkuranga ward, Mkuranga district in Coast region.

Given the nature and location of the development, the conclusion is that the potential impacts associated with the proposed development are of a nature and extent that can be reduced, limited and eliminated by the application of appropriate mitigation measures.

The consultant i.e. Assess Consulting Co. Ltd. of Dar es Salaam is of the opinion that the environmental and social impacts identified may be mitigated. If implemented accordingly, the proposed environmental and social management plan and environmental monitoring plan will safeguard the integrity of the environment and the livelihood of the communities in Mkuranga area and surrounding environment.

REFERENCES

Mkuranga District Profile, 2014

Glasson, J. Therivel, R. and Chadwick, A. (1994). Introduction to Environmental impact Assessment. UCL Press Ltd London. 342pp

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National Land Policy, Ministry of Lands and Human Settlements Development. 1997. Survey and Mapping, Dar es Salaam.

National Environmental Policy, Vice President's Office, 1997, Dar es Salaam

The Land Act (No. 4 of 1999). Government Printers, Dar es Salaam.

The Land Regulations. Government Printers, 2001, Dar es Salaam.

Environmental Management Act (EMA). Government Printers, 2004, Dar es Salaam.

Environmental Impact Assessment and Audit Regulations. G.N. No 339. 2005 Government Printers, Dar es Salaam.

APPENDICES

Appendix 1: Approved Terms of References for EIA study

IMPROVED TERMS OF FOR ENVIRONMENTAL IMPACTS ASSESMENT FOR ELECTRICAL CABLES AND CONCRETE ELECTRICAL POLES MANUFACTURING FACTORY ON PLOTS NO.4 -12, DUNDANI VILLAGE, MKURANGA WARD, MKURANGA DISTRICT IN COAST REGION

1. INTRODUCTION

During scoping, several key environmental issues were identified after completing a site reconnaissance, holding consultations with stakeholders of the project and reviewing various literatures related to the project. Similarly, expert opinions were sought on various key issues identified as requiring specialized knowledge. The aim of developing the Terms of Reference (TOR), is to provide formal guidance to the project proponent and contracted Consultant for carrying out the EIA of the proposed project on the range of issues that must be addressed in the EIA process. In these ToR, strategies for addressing the issues identified during scoping have been incorporated to make the EIA focused.

2. OBJECTIVES OF THE EIA STUDY

The EIA shall be conducted in accordance with the guidelines laid down by the Environment Management Act (EMA, 2004). Part IV of the EIA Regulations GN No. 349 of 2005 provides the general objectives for carrying EIA, among others a list include the following:

- To ensure that environmental considerations are explicitly addressed and incorporated into the development of the decision making process;
- To anticipate and avoid, minimise or offset the adverse significant biophysical, social and relevant effects of developmental proposal;
- To protect the productivity and capacity of natural systems and ecological processes which maintain their functions;
- To promote development that is sustainable and optimises resource use and management opportunities.

The specific objectives of the EIA are:

- To establish baseline information on both natural and built environments including socio-economic conditions of the proposed project area;
- To identify, predict and evaluate foreseeable impacts, both beneficial and adverse, of the proposed investment;
- To develop mitigation measures that aim at eliminating or minimising the potential negative impacts and promote positive ones; and
- To develop a management plan and monitoring plan for ease of reference during the project implementation.

3. DETAILED SCOPE OF WORK FOR UNDERTAKING AN ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

The detailed scope for undertaking Environmental Impact Assessment is intended to guide the Consultant to address relevant environmental and social issues during the assessment process. Among others, the EIA shall be conducted in accordance with the requirements of the National Environmental Impact Assessment Guidelines and Procedures.

The Consultant shall carry out the following tasks:

3.1 Baseline Data and Information

3.1.1 Study area

In order to cover assessment of all key issues related to the project, the study area shall be wider than that occupied by the proposed project's physical structures.

3.1.2 Description of the project

The Consultant shall give details of:

- Location of all project related developments
- General Layout of facility showing the size of the plot in relation to the components of the project;
- Description of the immediate land use of the area
- Organizational relationships, mandates and interactions among the different users of the resources and managers,
- Means of transportation of Electrical Cables and concrete electrical poles and its associated impacts
- the source of materials that will be used for the manufacturing process
- the technology that will be used together with the process flow diagram of each project component including input, output stream, by-product and waste
- management of wastes, both liquid and solid waste
- description of all project components and the activities in each component of the project development

3.2 Description of the Environment

The Consultant shall:

i. Provide general description of the project environment and sources of information for anyone requiring a more extensive description (especially the EIA reviewers);
ii. Identify those features that are particularly important in the project area – i.e. Maps at appropriate scales to illustrate the surrounding areas likely to be environmentally and socially affected;
iii. Identify areas that require special attention in the project implementation.

3.3 Stakeholders Consultations and Public Participation

Consultations of several key stakeholders as been carried out during the scoping stage of the EIA. However, the Consultants shall carry this further during the impact study.

The assessment shall establish the level of consultation of the affected stakeholders before designing the project and the level of involvement expected in the running, monitoring and maintenance of the project facilities, as this is an important aspect for both environmental and project sustainability.

The assessment will provide a framework for:

- For coordinating the environmental impact assessment with other government agencies, local government authority; and
- For obtaining the views of affected groups, and in keeping records of meetings and other activities, communications, and comments and their disposition.

3.4. Legislative and Regulatory Considerations.

The Consultant shall:

Undertake a review of policies, legislation and administrative framework within which the environmental management of the proposed project will be carried out. The following and any other relevant policies and legislations shall be reviewed

- National Environmental Policy (1997)
- National Land Policy (1995)
- The National Employment Policy (1997)
- National Policy on HIV/AIDS (2001)
- The Construction Industry Policy (URT, 2003)
- The National Transport Policy of 2003
- Human Settlement Development Policy, (2000)
- Environmental Management Act No. 20 of 2004
- The Land Act No. 4 of 1999
- Occupational Health and Safety Authority Act, 2003
- Water Resource Management Act of 2009
- The National Land Use Planning Act, 2007
- Public Health Act, 2009
- Local Government (District Authority) Act, Cap 287 of 1982
- Workers Compensation Act, 2008 - (Act No. 20/08)
- Employment and Labour Relations Act, 2004 - (Act No.6/2004)
- HIV and AIDS (Prevention and Control) Act of 2008
- Contractors Registration Act No. 17 of 1997
- Engineers Registration Act No. 15 of 1997
- Architects and Quantity Surveyors Act of 1997
- The Land Acquisition Act R:E 2002
- The Business Activities Registration Act, 2005

3.5 Impact Assessment

The proposed project consists of activities, which (based on the current available information) are apparently "small scale" in nature. Because of their diversity, each activity and its sub-activities and alternative shall be assessed on its merit and links established wherever appropriate / possible.

To avoid ambiguity in the impact assessment - identifying potential impacts, relevant environmental factors and mitigation measures, Consultants shall make use of the checklist covering the major areas of impact as provided for in the EIA guidelines.

Using baseline data and information the following tasks shall be carried out by the consultant.

3.5.1 Task 1. Identification and Prediction of Impacts

Under this activity the consultant shall:

i. Identify issues and concerns in order to find suitable remedies;
ii. Identify linkages among project components and the issues;
iii. Identify where project activities or elements interact with social and biophysical environment (direct impacts);
iv. Identify indirect impacts of the project on the environment;
v. Identify cumulative impacts that may be anticipated;
vi. Identify residual impacts if any;
vii. Identify Electrical cables and concrete electrical poles management and transportation impacts
viii. Predict probability, magnitude, distribution and timing of expected impacts:
ix. Forecast what will happen to the affected environmental components if the project is implemented as is or if the alternatives (e.g. sites) are chosen.

3.5.2 Task 2: Estimation of the Significance of the Impacts.

The consultant shall:

i. Determine which environmental components are mostly affected by the project or its alternatives;
ii. List issues raised by the public and classify them according to the level and frequency of concern whenever possible;
iii. List regulatory standards, guidelines etc. that need to be met; and
iv. Rank predicted impacts in order of priority for avoidance, mitigation, compensation and monitoring.

3.5.3 Task 3: Development of Management Plan to Mitigate Negative Impacts, and Development of Monitoring Plan

The consultant shall:

i. Determine appropriate measures to avoid or mitigate undesirable impacts; assess and describe the anticipated effectiveness of proposed measures;
ii. Ascertain regulatory requirements and expected performance standards;
iii. Determine and assess methods to monitor impacts for prediction of accurate remedial measures for effectiveness;
iv. Determine and assess methods to monitor for early warning of unexpected effects;
v. Re-assess project plans, design and project management structure;
vi. Describe follow-up schemes and post-project action plans for achieving EIA objectives; and
vii. Assess the level of financial commitment by the project proponent for the management and monitoring plan, and follow up activities.

The consultant shall be guided by the cost-effectiveness principles in proposing amelioration measures. Estimation of costs of those measures shall be made. The assessment will provide a

detailed plan to monitor the implementation of the mitigation measures and impacts of the project during operation.

3.5.4 Task 4: Identification of Institutional Needs to Implement Recommendations.

The Consultant shall review the institutional set-up, community, ward, District/ Regional and national levels - for implementation of the Management and Monitoring Plans recommended in the environmental assessment. The assessment shall identify who should be responsible for what and when.

3.5.5 Task 5: Drawing Recommendations.

The consultant shall:

i. Highlight key concerns and considerations associated with the acceptance and implementation of recommended actions;
ii. Determine resource requirements for implementing recommendations;
iii. Determine capacity and resourcefulness of the client in meeting such commitments;
iv. Explain rationale for proposed development and benefits and costs vis-à-vis the no-project option; and
v. Ascertain degree of public acceptance of or reaction to recommendations.

3.5.6 Task 6: Environmental Impact Statement (EIS)

The assessment shall result in an EIS focusing on findings of the assessment, conclusions and recommended actions, supported by summaries of data collected etc. This shall be a concise document limited to significant environmental issues. The EIS format will be as shown below:

Environmental Impact Assessment Report

- Executive Summary
- Introduction
- Description of the proposed project and
- Policy, Legal and Administrative Framework,
- Description of Environmental Setting
- Stakeholders consultation and Public participation
- Impact Identification, Assessment and Analysis of alternatives
- Mitigation measures
- Environmental Management Plan
- Environmental Monitoring Plan
- Cost benefit Analysis
- Decommissioning Plan
- Summary and Conclusions
- List of References
- Appendices
    - List of names of the Consultant team
    - Records and/or minutes of public consultations
    - Data used during the analysis

- Any technical explanation of methods used (optional)
- Terms of Reference of this study.

3.5.7 Task 7: Review

The review report from NEMC may require further input (data collection, consultation inputs etc.). The consultant shall undertake to provide extra information and inputs until the project review is satisfactorily concluded.

4. STUDY TEAM

The consultants shall deploy consultants/experts with the demonstrable practical experience in conducing EIA studies. Specific experience in environmental engineering, chemical and process engineering and Sociologist shall be involved.

5. REPORTING AND REPORT PRESENTATION

The final draft of the EIS document should be concise, following the report writing guidelines in the national Environment Impact Assessment and Audit Regulations, G.N. No. 349 of 2005, for simplifying the review process.

6. RECORDS OF MEETINGS

The consultants shall provide records of the names of organizations, government and departments and individuals whose views they will obtain. The record will also provide descriptions of views and information that will be obtained.

7. OUTPUTS

The consultant shall submit 15 original and well bound hard copies to NEMC coupled with 15 copies of Non-technical summary for review.

8. REFERENCE

The objective of this section is to identify and record the written materials used in the study. All materials both published and unpublished will be listed

Appendix 2: Letter from NEMC for approval of Terms of Reference

NATIONAL ENVIRONMENT MANAGEMENT COUNCIL(NEMC)
BARAZA LA TAIFA LA HIFADHI NA USIMAMIZI WA MAZINGIRA

Telephone: +255 22 2774889,
Direct line: +255 22 2774852
Mobile: 0713 608930
Fax: +255 22 2774901
Email: dg@nemc.or.tz
Website: www.nemc.or.tz

35 Regent Street,
P. O. Box 63154
11404 Dar es Salaam
TANZANIA

In reply please quote:
Ref: **NEMC/HQ/EIA/05/0654/Vol. I/4** Date: **17/10/2016**

Managing Director,
Everwell Cable and Engineering Company Ltd,
P.O Box 63149,
Dar es Salaam.

RE: SCOPING REPORT AND DRAFT TERMS OF REFERENCE (ToR) FOR THE PROPOSED ESTABLISHMENT OF THE ELECTRICAL CABLE AND CONCRETE ELECTRICAL POLES MANUFACTURING FACTORY AT DUNDANI VILLAGE, MKURANGA WARD, MKURANGA DISTRICT, PWANI REGION

We acknowledge receipt of your consultant's letter submitted with a Scoping report and draft Terms of Reference (ToR) for undertaking an Environmental Impact Assessment (EIA) study on the above-mentioned project which was registered and assigned Application Reference Number 6205. Please quote Reference Application Number for all future correspondences regarding this project.

In general, the ToR is adequate and can therefore be used to guide the EIA study. However, the following should also be taken into consideration to improve the ToR and EIS;

i. The EIS should indicate with justification the source of the materials that will be used for the manufacturing process;

ii. The EIS should describe clearly the technology that will be used together with the process flow diagram of each project component by indicating input, output stream, by-product and waste;

iii. The EIS should clearly provide management of waste both liquid and solid waste;

iv. The impacts associated with operations of the electrical cable and concrete poles manufacturing should clearly be stated and the mitigation measures and plans for implementations provided in the EIS;

v. The project should be well described indicating all project components and the activities in each component of the project development;

vi. The EIS should be attached with site layout plan showing the size of the plot in relation to the components of the project;

vii. The EIS should tell the immediate land use of the area;

viii. Stakeholders consultations should be done adequately and records of meetings, communication and comments raised be appended and addressed in the EIS. Names and signatures of all the consulted stakeholders should be appended as well. Also, include stakeholders' issue response table - showing how and where significant issues raised by stakeholders have been addressed in the EIS;

ix. The timeframe for which this study will be conducted should be indicated in the ToR stating clearly the time from project brief up to final submissions;

x. The contents and the structure of the Environmental Impact Statement (EIS) should adhere to Regulations 18 and 19 respectively of the EIA and Audit Regulations, 2005.

Please, work on the suggested improvement and copy of the letter which approved the ToR should be appended in the final EIS to be submitted to NEMC for review.

Following receipt of the EIS, the Council will arrange for the site verification visit to the project sites and review meeting that will follow thereafter. You will be required to provide transport for site verification team and review costs amounting to **Tshs. 10,000,000/=** which excludes transport costs that will be provided by the developer.

Kindly submit two (2) separate binded copies of the ToR supported by an official letter that has incorporated the suggested improvements within seven days from the day of receiving this letter for endorsement before undertaking EA study.

Attached herewith, please find the invoice indicating the costs for the site verification and the review.

Looking forward to your cooperation on this matter

Arnold Kisiraga
For: Director General

Cc: ASSESS Consulting Limited,
P.O. Box 14466,
Dar es Salaam.

Appendix 3: Signatures of consulted stakeholders

ASSESS CONSULTING CO. LTD, P O BOX 14466, DAR ES ES SALAAM

LIST OF CONSULTED STAKEHOLDERS FOR ENVIRONMENTAL IMPACT ASSESSMENT STUDY

PROJECT NAME: EVERWELL CABLE AND ENGINEERING CO. LTD

DATE OF CONSULTATION: 15th/09/2016

S/N	Name/Jina	Title/Position/Cheo	Location/Institution/Taasisi	Tel/Email/Simu	Signature/Sahihi
1	HJ Basisi	DEMO-MKURANGA	MKURANGA DC	0[illegible] 33 8458	
2	EJ. NNKO	EHO-MKURANGA	MKURANGADC	0718-196954	
3	Phanuel Munisi	Engineer	—11—	0767553600	

ASSESS CONSULTING CO. LTD, P O BOX 14466, DAR ES ES SALAAM

LIST OF CONSULTED STAKEHOLDERS FOR ENVIRONMENTAL IMPACT ASSESSMENT STUDY

PROJECT NAME: MS/EVERWELL CABLE & ENG LTD

DATE OF CONSULTATION... 19/09/2016

S/N	Name/Jina	Title/Position/Cheo	Location/Institution/Taasisi	Tel/Email/Simu	Signature/Sahihi
1.	Angelina Kawanga	Inspector	OSHA	0713-655187	Kaanga
2.	RENALDA DAMAS	INSPECTOR	OSHA	0712-213162	
3	Eng. P.K. Nyangomba	Industrial Engineer	MITI	0756141179	

ASSESS CONSULTING CO. LTD, P O BOX 14466, DAR ES ES SALAAM

LIST OF CONSULTED STAKEHOLDERS FOR ENVIRONMENTAL IMPACT ASSESSMENT STUDY

PROJECT NAME: M/S EVERWELL CABLE ENGINEERING CO. LTD

DATE OF CONSULTATION: 31/08/2016

S/N	Name/Jina	Title/Position/Cheo	Location/Institution/Taasisi	Tel/Email/Simu	Signature/Sahihi
	SALEHE S. MATITU	VEO DUNDANI	H/ KIJIJI	0754919772	
	SAIDI S. KINDUMBO	MW/KITI KIJIJI	HALMASHAURI TAKIJIJI	0786060154	
	MOHAMEDI S. NGOTA	MW/KITI KITONGOJI	H/ KIJIJI	0788856076	

Appendix 4: Certificate of Incorporations

C.1

TANZANIA

Certificate of Incorporation

Section 15

No 119188

I HEREBY CERTIFY THAT

EVERWELL CABLE AND ENGINEERING COMPANY LIMITED

is this day incorporated under the Companies Act, 2002 and that the Company is Limited.

Given under my hand at Dar es salaam this **30TH** day of **JULY** **TWO THOUSAND AND FIFTEEN.**

Asst.Registrar of Companies

Appendix 5: Lease Agreement

LEASE AGREEMENT

THIS AGREEMENT is made on the 21st day of August 2015.

BETWEEN

STARWAYS GROUP LTD a company duly incorporated in the United Republic of Tanzania of Post Office Box Number 72262, Dar es Salaam (hereinafter called the "Lessor" where the context so admits includes his successors and assigns) of the one part,

AND

EVERWELL CABLE AND ENGINEERING COMPANY LTD a company duly incorporated in the United Republic of Tanzania of P. O. Box 63149, Dar es Salaam (hereinafter referred to as the "Lessee" where the context so admits includes his successors and assigns) of the other part.

WHEREAS

A. The Lessor is the owner of the workshop, located at Plot NO.4-12, Block G, Dundani Mukuranga Coast Region, Tanzania (the "workshop") and is desirous to lease the same to the lessee.

B. Whereas the lessee is willing to lease the workshop for a period of five (5) years from the time the leased workshop is completely constructed and ready for use.

NOW THEREFORE THIS AGREEMENT WITNESSETH as follows:

1.0 **TERM OF THE TENANCY:**

The Lessor leases to the Lessee the workshop from the 1st of August 2015 to 31st of July 2020

PROVIDED THAT: The term hereby created may at the option of both the Lessor and the Lessee, the lease agreement will be terminated naturally and legally at the five years term expire date or be continuous of the Lease but after notifying either party six month before five years term expiry of the intention to do continue with the Lease. Any defaults made by terminating the agreement in a illegally way will be not allowed

within the lease period, otherwise the default party should pay the other party one year rent of USD 28,320 in advance as compensation.

2.0 RENT PAYABLE:

2.1 The Lessee shall pay rent of USD 2,000 per month, exclusive of VAT, which means the Lessee shall pay rent of USD 28,320 per year, inclusive of VAT(18%), including service charge. The service charge shall cover the following services:

1) Security service of entire industrial park but not including internal area of the leased premises;

2) Public afforest of internal industrial park;

3) Fire protection of entire industrial park but not including internal area of the leased premises;

4) Recreational facilities inside the industrial park;

5) Public service facilities inside the industrial park.

2.2 The Lessee shall pay the rent annually to the Lessor before the next year coming.

2.3 The rent for the extended term of the lease, as specified in Clause 1.0, shall be payable to the Lessor in advance at the beginning of that term.

3.0 LESSEE'S COVENANTS:

THE LESSEE COVENANTS WITH LESSOR as follows:

(a) To pay the reserved rent on the days. And to pay a ten percent (10%) of the total annual rent being the amount of withholding tax and a one percent (1%) of the total annual rent being the amount of stamp duty payable to the Commissioner of Income Tax. Such amount shall not be deducted from the rent paid to the Lessor.

(b) To pay all water, telephone, internet and electricity bills during the tenancy period and as demanded by the relevant utility companies. The Lessee shall

purchase and be responsible for their own transformer and all related accessories, cables and installation works and charges etc;

(c) At all material time during the said term to keep the premises including doors, windows, water taps, electric light fittings and other Lessor's fixtures and fittings in good and tenantable repair, damage arising from natural disasters or other force majeure such as earthquake, thunderstorm, volcanic eruption, war, turmoil or reasonable and proper use excepted;

(d) To permit the Lessor or its agent, at all reasonable times during the said term with or without workmen with prior reasonable notice to enter upon and examine the condition of the premises and in case the same shall be found to be defective or in need of repair to leave notice in writing on the premises of such defects or maintenance for which the Lessee is liable under the provisions of paragraph (d) hereof and require the Lessee to make good the same in a proper manner to the satisfaction of the Lessor within the space of one calendar month next after service to the Lessee of every such notice, any maintenance costs should be paid by the Lessee;

(e) Not to make any alterations in or additions to the premises without the consent of the Lessor which consent shall not be unreasonably withheld or delayed;

(f) Not to cut, maim or injure any of the walls or timbers of the premises on the said building or suffer or permit the same to be done save as may be reasonably required;

(g) To use the premises for commercial purpose only;

(h) Not to do anything that would invalidate the insurance policy or increase the premium payable for the premises;

(i) Unless otherwise agreed by the Lessor not to assign, lease or sublet the premises or any part thereof without the written consent of the Lessor, but such consent shall not be unreasonably withheld or delayed;

(j) In the event the Lease is not renewed at or before the expiry date of the initial term to yield up the premises in such a good and clean condition as shall be in accordance with the Lessee's covenants herein contained.

(k) Not to sub lease the premises without the written consent of the lessor, such consent shall not be withheld unreasonably.

(l) To buy insurance for their own properties.

(m) The Lessee should obey all the related industrial park management rules made by Lessor.

(n) The Chinese staff of the Lessee can enjoy the recreational facilities inside the industrial park by following the management rules.

4.0 LESSOR'S COVENANTS:

THE LESSOR COVENANTS WITH THE LESSEE as follows:

(a) To keep the roof, main walls of the house, and the drains, septic tanks and water supply and the pipes and two offices. To keep two washrooms and cooling re-circulation system inside the workshop in good and tenantable repair and condition before handing over the premises to the Lessee and during the period of occupancy by the Lessee and the Lessor shall charge in terms with the related payment;

(b) The construction costs sum for the two washrooms and cooling re-circulation system within the workshop will be refunded by the Lessee.

(c) Due to the political issues or policies in Tanzania, the Lessor could not proceed or carry on or complete the construction of the leased premise, therefore after confirming the inability to carry on the contract by the Lessor, the paid guaranteed deposits or other payments shall be refunded to the Lessee without any delay.

(d) To permit the Lessee paying the rent hereby reserved and observing the covenants and conditions hereby contained or implied and on its part to be performed and observed, peacefully and quietly to possess and enjoy the premises during the tenancy hereby created without any interruption from or by the Lessor or any person rightfully claiming from or under him;

5.0 PROVIDED ALWAYS AND IT IS HEREBY AGREED AND DECLARED as follows:

(a) If default shall be made in the performance of any of the covenants on the part of the Lessor or the Lessee, then the term herein contained shall upon failure by the Lessee or the Lessor to remedy such default within thirty (30) days of a

written notice cease notwithstanding anything to the contrary and without prejudice to any right of action or remedy of the Lessor in respect of any antecedent breach of any covenants by the Lessee hereinbefore;

(b) That Security of the leased premises shall be the responsibility of the lessee and the lessor shall carry no liability of any theft or loss that may occur at the leased premises.

(c) The Lease hereby created can be terminated by any of the parties in accordance with clause 5.0 (a); or by either party serving the other a written notice of not less than thirty (30) days.

(d) This Agreement shall be governed by and interpreted in accordance with the Laws of Tanzania.

IN WITNESS WHEREOF the Lessor and the Lessee have executed these presents on the day hereinbefore appearing:-

SEALED with the COMMON SEAL of the Said

STARTWAYS GROUP LTD and

STARTWAYS GROUP LTD ..... LESSOR P.O. BOX 76126, DAR-ES-SALAAM

Delivered in our presence this ..... day of ....., 2015

Name: JIAN JUN BU

Signature: .....

Address: P.O.BOX 72262 D'SM

Qualification: MANAGING DIRECTOR

Name: JIE TONG

Signature: .....

Address: P.O.BOX 72262 D'SM

Qualification: COMPANY SECRETARY

SEALED with a COMMON SEAL of the Said

EVERWELL CABLE AND ENGINEERING COMPANY LTD and

Delivered in our presence this ..... day of ....., 2015

EVERWELL CABLE AND ENGINEERING COMPANY LTD
P.O Box 63149
MKURANGA, DUNDANI

Name: LU JIAOPENG

Signature: .....

Address: P.O. BOX 63149 DSM

Qualification: MANGING DIRECTOR

Name: ZENG MINGSHAN

Signature: .....

Address: P.O. BOX 63149 DSM

Qualification: MANGING DR

In the presence of:

Name: Costa Mahalu

Address: P.O. Box 5664

Qualification: Notary Public

COSTA MAHALU ADVOCATE NOTARY PUBLIC & COMMISSIONER FOR OATHS