2021

Feasibility Study

LOW VOLTAGE COPPER CABLE PLANT

Client:
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Executive Summary

More than one billion people in developing countries lack access to electricity, with a large share living in Africa. Connectivity is deficient in rural areas, and Tanzania's infrastructure development is challenging due to its vast geographical extent and low population density. Electrification rates are 17% in rural and 65% in urban areas of mainland Tanzania.
It is often hypothesized that lack of access to electricity hampers human development in many regards. The lack of access to modern lighting in households limits their possibilities to pursue productive activities after nightfall, such as educational and recreational activities. Likewise, enterprise development and the provision of public services become more complex.
In addition, even in grid-covered areas service, quality is often bad with frequent outages, forcing firms to interrupt their work or resort to expensive generators. According to Blimpo and Cosgrove-Davies (2019), "in 25 of the 29 countries in Africa with recent data, less than one-third of firms have reliable access to electricity". It is, therefore, often argued that addressing the reliability of the grid should be given a higher priority by the policy. The purpose of this report is to investigate the economic feasibility for a Tanzanian-owned and operated company Cash Sale Store Limited. To produce low voltage PVC insulated Cooper cables in Dar es Salaam Tanzania.

Cash Sale Stores Ltd is a locally established and the leading distributor of electrical and lighting solutions for residential, commercial, and industrial applications throughout Tanzania founded in 1991. The company actively promotes international standards locally and is uniquely placed to cater to infrastructure projects across Tanzania, East, and Central Africa.
Tronic, Cash Sale Stores flagship is a reputable industrial electrical and consumer electronics goods brand across East Africa. CSS imports most of its finished products from the United Arab Emirates and China apart from copper cables which it procures locally.
This document presents several financial scenarios outlining risk factors for CSS and its business partners on its strategy to vertically integrate and streamline its operations by taking direct ownership of the copper cable production process rather than relying on external suppliers or contractors.
CSS can achieve vertical integration by establishing its manufacturing unit for drawing and extruding copper cables used for electrification. Copper wire is necessary for power generation, power transmission, power distribution, electronic circuitry, and countless types of electrical equipment.
Currently, CSS purchases one million US dollars' worth of cables from the local market and distributes them through its 250 distributors. Along with its merchandise across Tanzania and East Africa, CSS will require a significant initial capital injection to implement this project.

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Introduction

Syndicated Analytics

Who we are?

Figure 1 Who we are as a Company

What we do as company

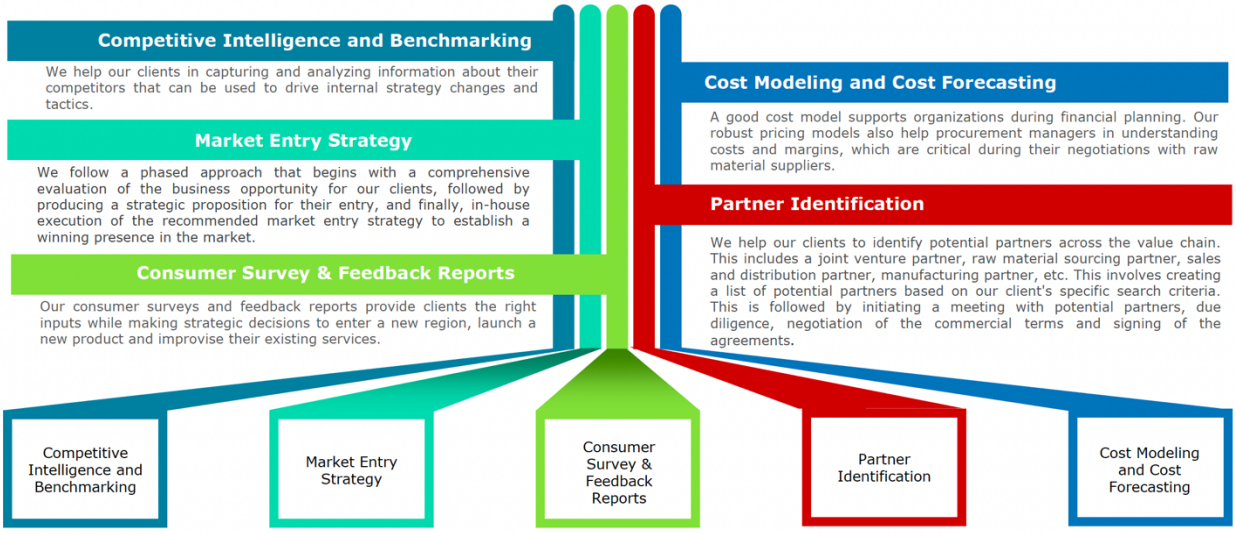


Figure 2 What we do as a company

Preface

Syndicated Analytics provides market research reports covering various topics encompassing all the major industry verticals. Our reports represent a rich source of information and data and offer a comprehensive review of the different market dynamics. These insights can help the investors and industry participants address risks and create enhanced opportunities for positive growth.

This report presents the reader with a thorough understanding of the copper wire market in Tanzania. The study covers all the requisite aspects to know while making a foray into the Copper Wire industry. It is based on the latest economic data and presents exhaustive insights about the primary process flow, raw material requirements, reactions involved, utility costs, operating costs, capital
investments, pricing, and margins.

The Syndicated Analytics team has prepared this report by combining industry insights with data from various external sources. To prepare this report, we conducted exhaustive interviews with various industry participants and experts who are knowledgeable about the dynamics of the industry. They also carried out extensive secondary research and literature review to further validate the data gathered through the interviews.

December 2021.

RESEARCH METHODOLOGY

Research Objectives

- The objective of the report is to provide our clients CSS with an in-depth analysis of the copper wire market. The report covers all the industry's essential aspects, including the current and historical market trends, market forecast, market segmentation, and market drivers and challenges.
- This report is intended to help our clients CCS:
    - Address numerous market challenges
    - Identify new opportunities
    - Make strategic business decisions

Stake Holders

- Our report will help all those who have a functional or financial interest in the copper wire market or are planning to foray into it. Our insights will be valuable for:
    - The client CSS
    - Investors, Stockholders and Creditors
    - Government and Research Organisations
    - Researchers, Consultants and Business Strategists
    - Suppliers, traders, distributors, and retailers
    - Associations and industrial bodies
    - Regulatory institutions

Methodology

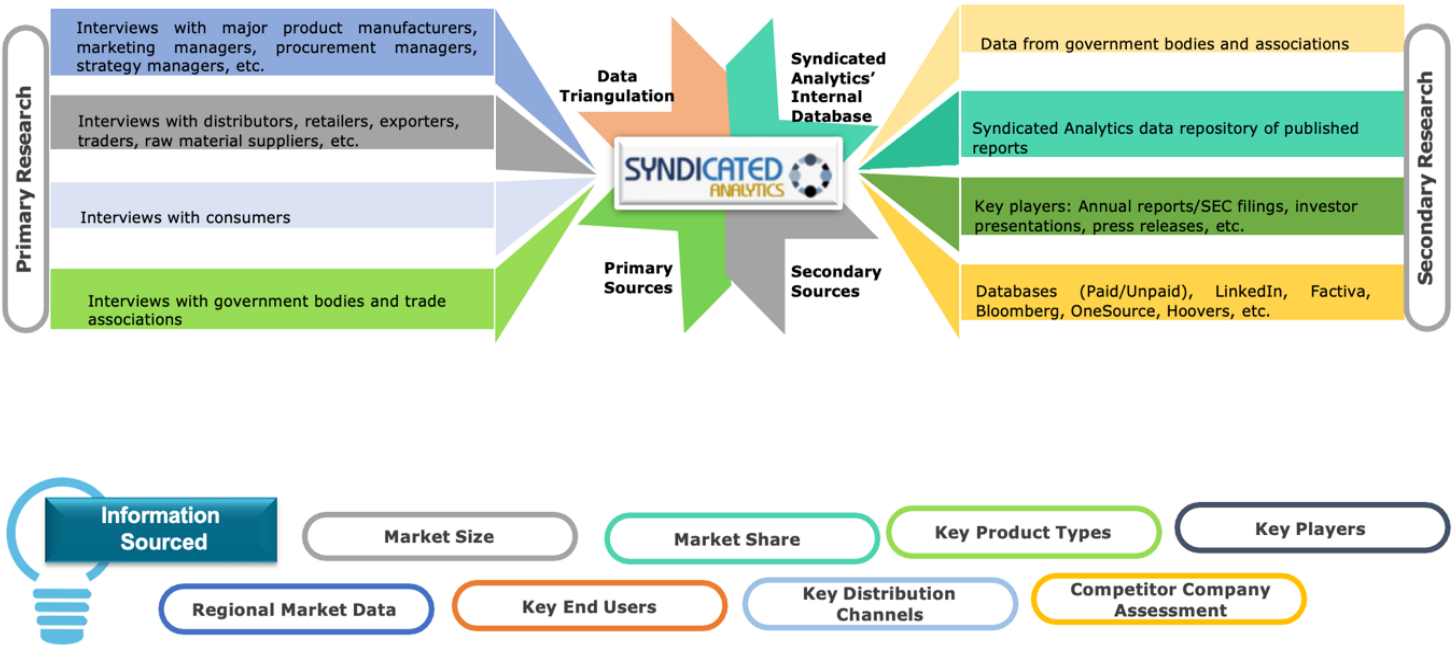


Figure 3 Research methodology and sources of information

As illustrated in figure 3 there was a thorough method of gaining reliable and verified data to draw the most accurate conclusions as well get a broader understanding of the Low voltage cable market. This understanding also helps in drawing viable conclusions for the feasibility study carried out.

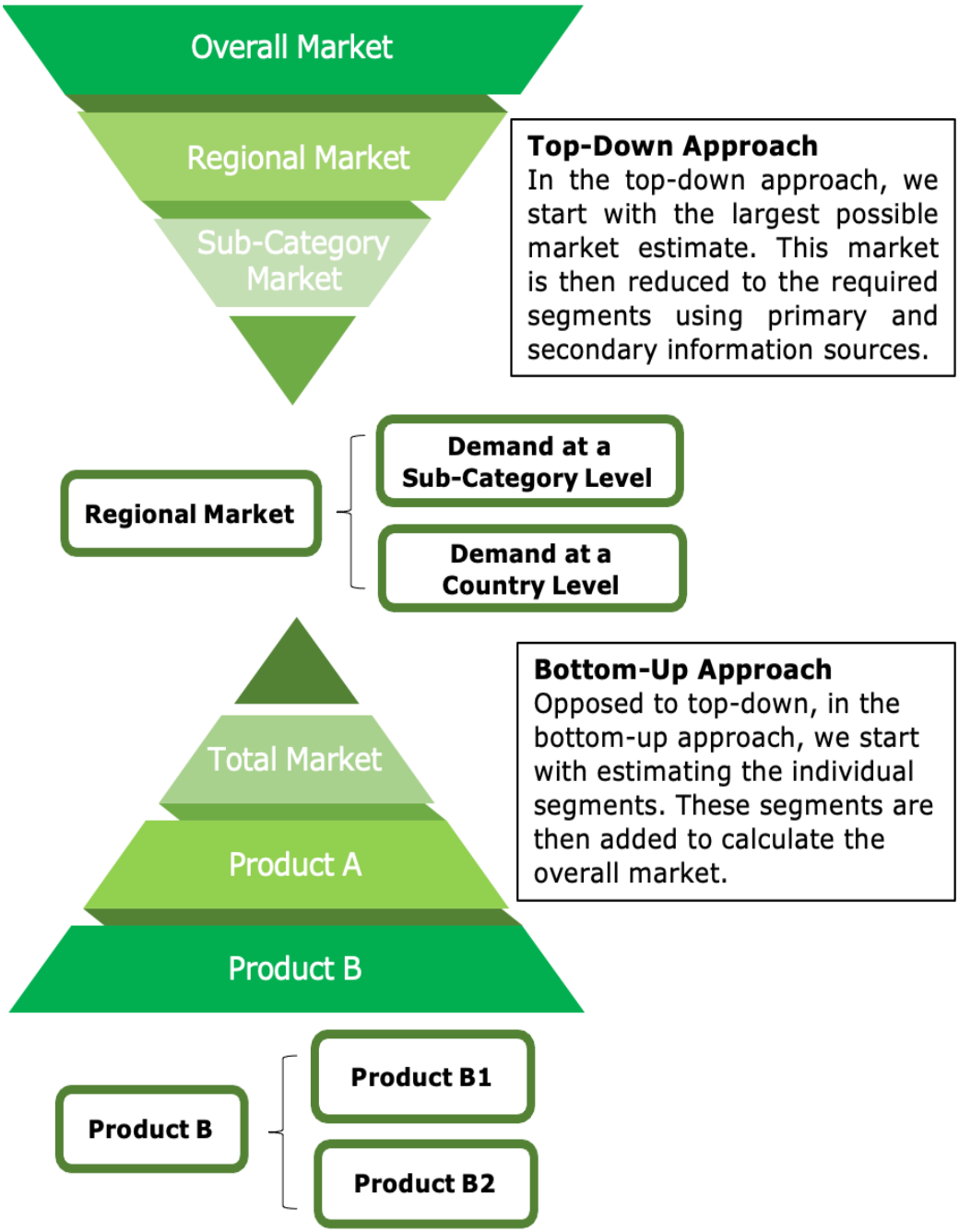


Figure 4 Top-Down and Bottom-Up Method Explained

Combined Approach
We combine both top-down and bottom-up approaches during the market estimation process to ensure that the data is accurate and reflects the industry trends.

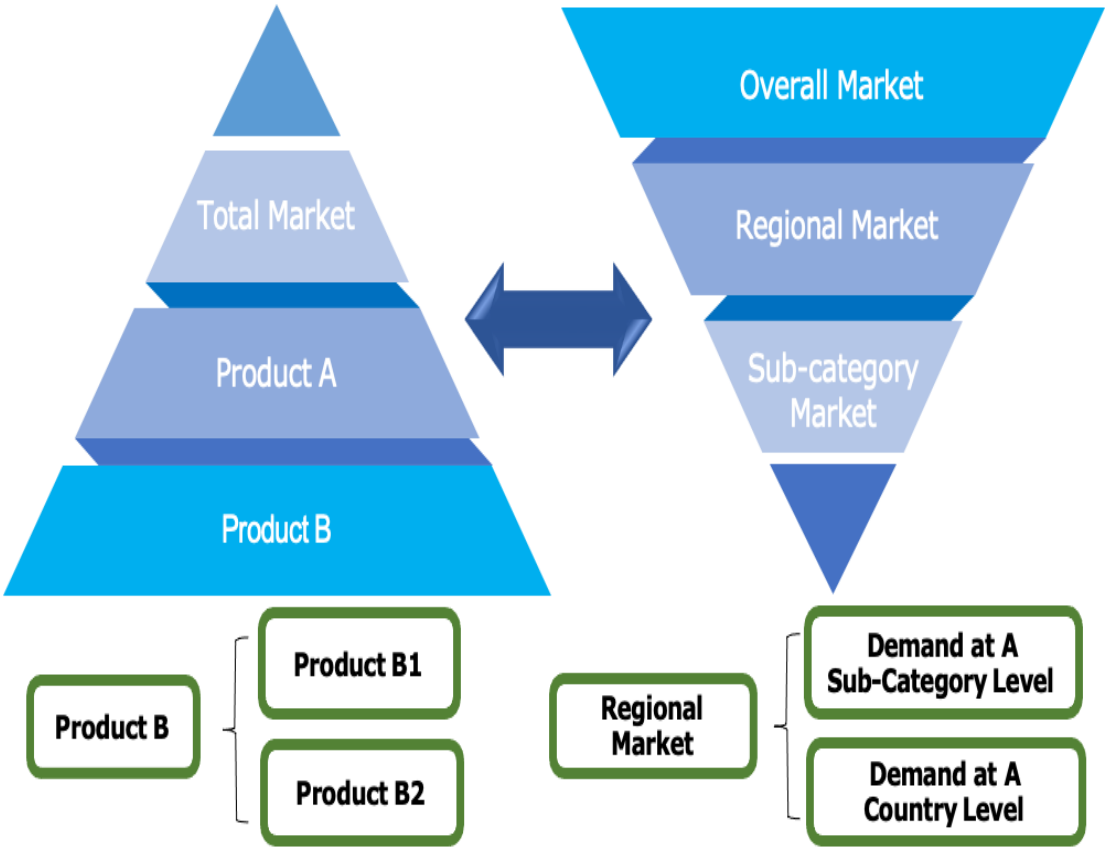


Figure 5 Combined Approach used

Forecasting Methodology

We used our extensive database of macroeconomic and sector-specific data to generate the industry forecast. The initial baseline forecasts have been generated with the most recent market data. After an initial baseline forecast, all future events and assumptions are based on extensive primary and secondary research Information is gathered from our internal databases, as well as from key stakeholders in the industry. This enables us to take account of unprecedented events that otherwise cannot be normally captured.

Data Validation

Before finalization, the data undergoes a series of internal and external quality checks, ensuring that the final data reflects high levels of quality and reliability.

- The data validation process involves multiple levels of internal and external validation. Before finalization, market estimates and forecasts undergo a three-step protocol:
    - Verification by our internal quality control team
    - Confirmation by industry experts and Key Opinion Leaders (KOL's)
    - Validation by various data analysis models
- The final report is dispatched only after the information has been validated using our three-step validation protocol.

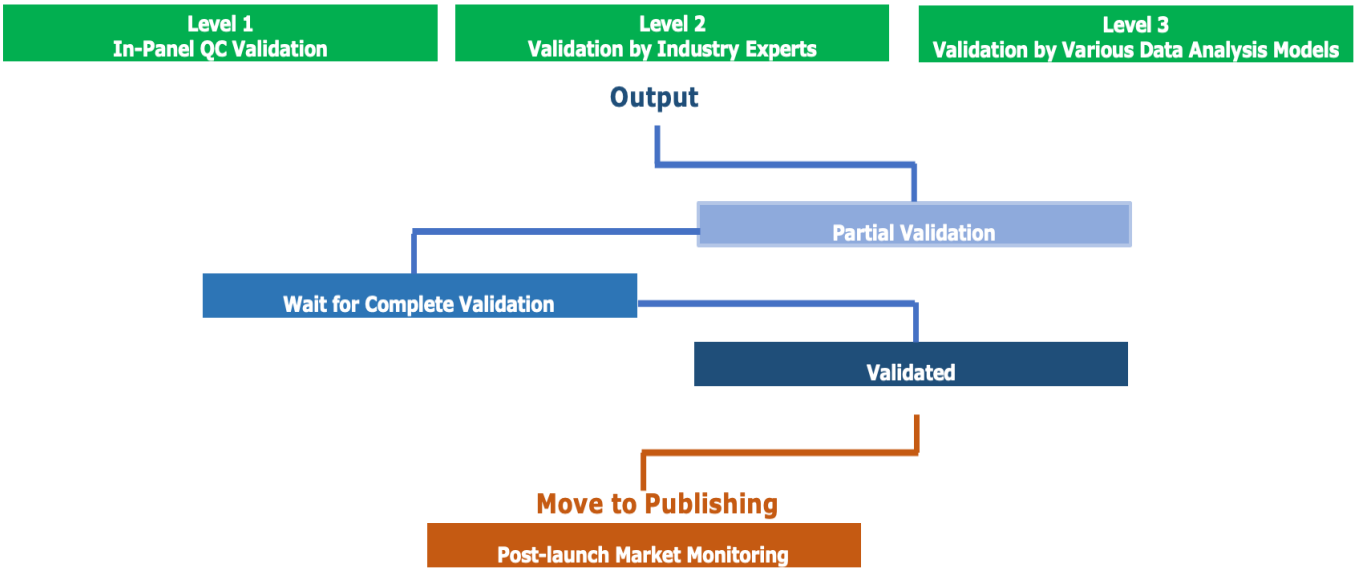


Figure 6 Validation method

Assumptions

- US Dollar (US$) is the base currency considered for this study. The conversion of other currencies to US$ has been deemed to be based on the average exchange rate for the respective review period years. The exchange rate conversion for the forecast period has been determined based on the base year's conversion rates unless and otherwise mentioned.
- The base year has been identified based on the availability of annual reports or secondary information. The base year considered for this study is 2020.
- The review period considered for this study is from 2015 to 2020, and the forecast period is from 2021 to 2026.
- Market size estimations for the forecast years are in real terms. Inflation is not a part of the pricing, and the Average Selling Price (ASP) has been kept constant through the forecast period.
- The distribution of primary interviews conducted is based on the regional share of the market and the presence of key players in the region.
- As a result of data-triangulation through multiple methodologies and approaches, the resulting estimates' weighted averages were considered final values.

Market Overview

Global Copper Wire Market

- The global copper wire and cable market was valued at $156.11 Billion in 2020 and is projected to reach $267.17 Billion by 2030, registering a CAGR of 6.0% from 2021 to 2030.

Market Breakup by Region

- In 2020, Asia-Pacific dominated the global copper wire market, accounting for a share of 56.2% of the worldwide market.
- Asia-Pacific was followed by Europe (18.5%), North America (14.3%), Latin America (6.2%), and the Middle East and Africa (4.8%).

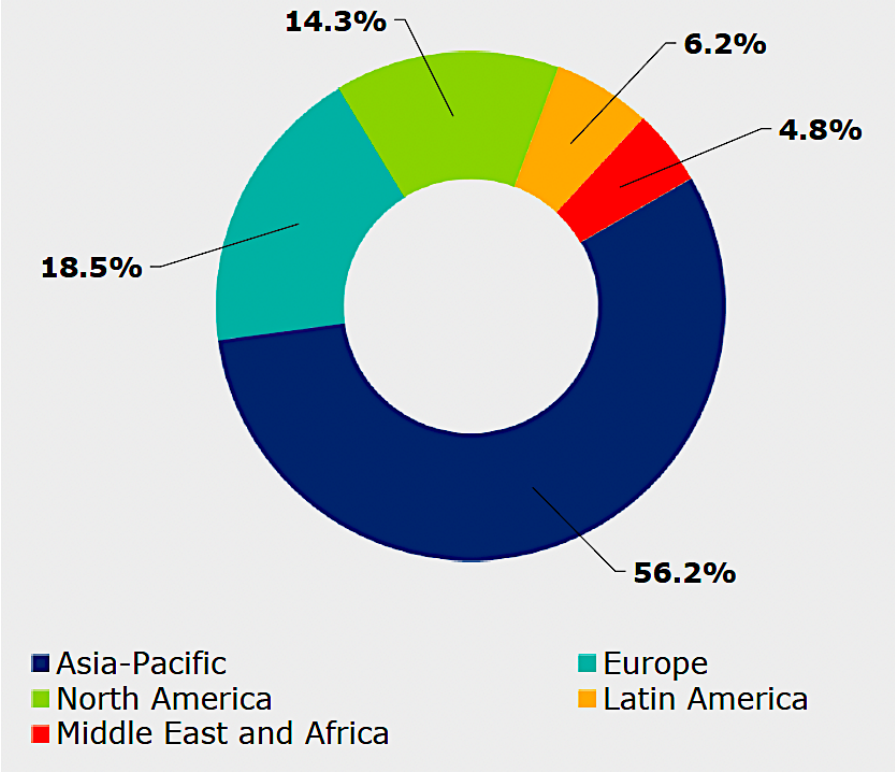


Figure 7 Copper market break down by region

Market Breakup by Application

- In 2020, building and construction represented the most popular application of the global copper wire market, accounting for 33.8% of the total market.
- Building and construction were followed by telecommunication and power (23.2%), transport (14.0%), industrial equipment (7.5%), electronics (5.5%) and Others (16.0%).

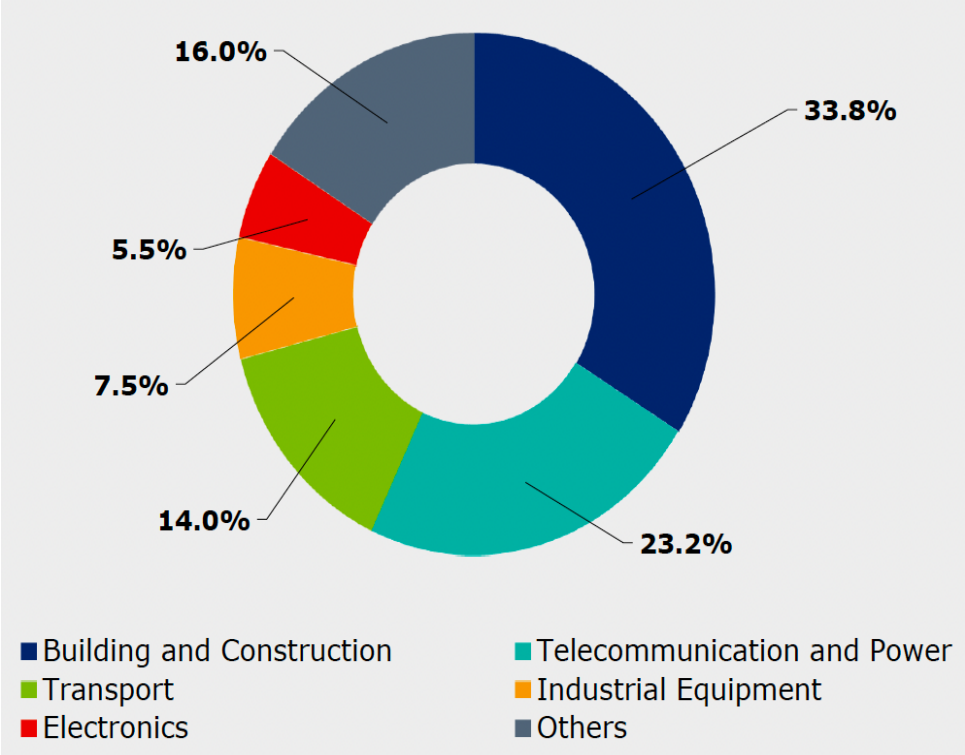


Figure 8 Copper Cable usage by industry

Tanzanian Copper Market

Energy profoundly influences people's lives, and it is central to practically all aspects of human welfare, including access to water, agricultural productivity, health care, education, job creation, climate change, and environmental sustainability. A 2016 survey was commissioned to map the energy access situation in Tanzania Mainland, focusing on rural electrification. The survey results show that, for the households reported to be connected to electricity, they were receiving electricity supplied through the grid, electricity generated through private entity/individual owned sources (excluding solar) generated at a household level, and electricity generated from solar power.
Figure 9 shows that 74.9% of households in Tanzania Mainland are connected to electricity supplied through the grid. The results also show that 24.7 percent of households were using electricity generated from solar power, and only 0.3 percent were using private entity/individual electricity generated from owned sources (excluding solar).

- 3,753,615 households in Tanzania Mainland were electrified with any form of electricity. This is equivalent to 32.8 percent of 11,454,818 households of the Tanzania Mainland.
- Of the electrified Tanzania Mainland's households, 74.9 percent electrified with grid, private entity/individual electricity generated from owned sources (excluding solar) (0.3 percent), and solar power (24.7 percent)
- Of the electrified households in Tanzania Mainland, 1,301,749 are in rural areas (34.7 percent)
- Of the electrified rural households, 34.5 percent electrified with grid, private entity/individual electricity generated from owned sources (excluding solar) (0.6 percent) and solar power (64.8 percent)
- Electrified urban households were 2,451,866 which were 65.3 percent of the total electrified households in Tanzania Mainland
- Of the electrified urban households, 96.4 percent electrified with grid, private entity/individual electricity generated from owned sources (excluding solar) (0.2 percent) and solar power (3.4 percent)

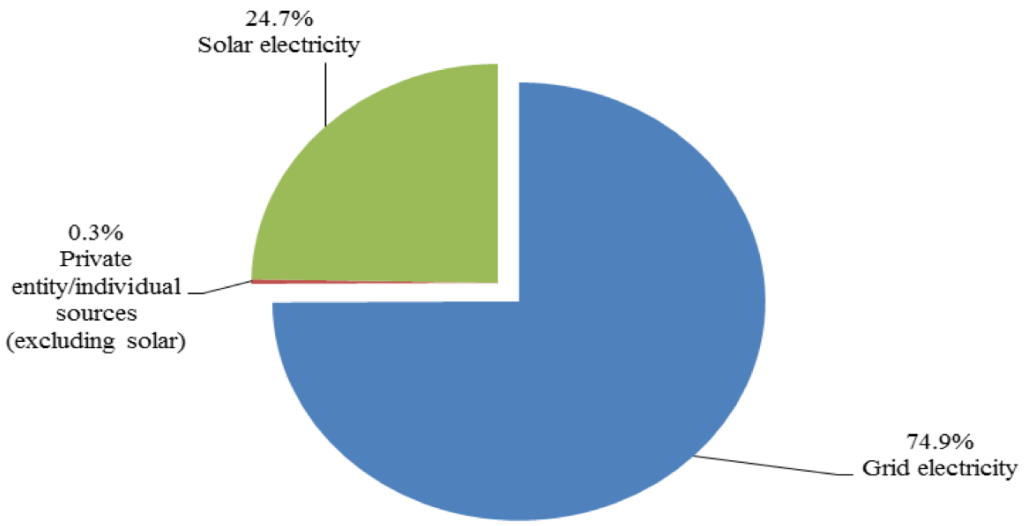
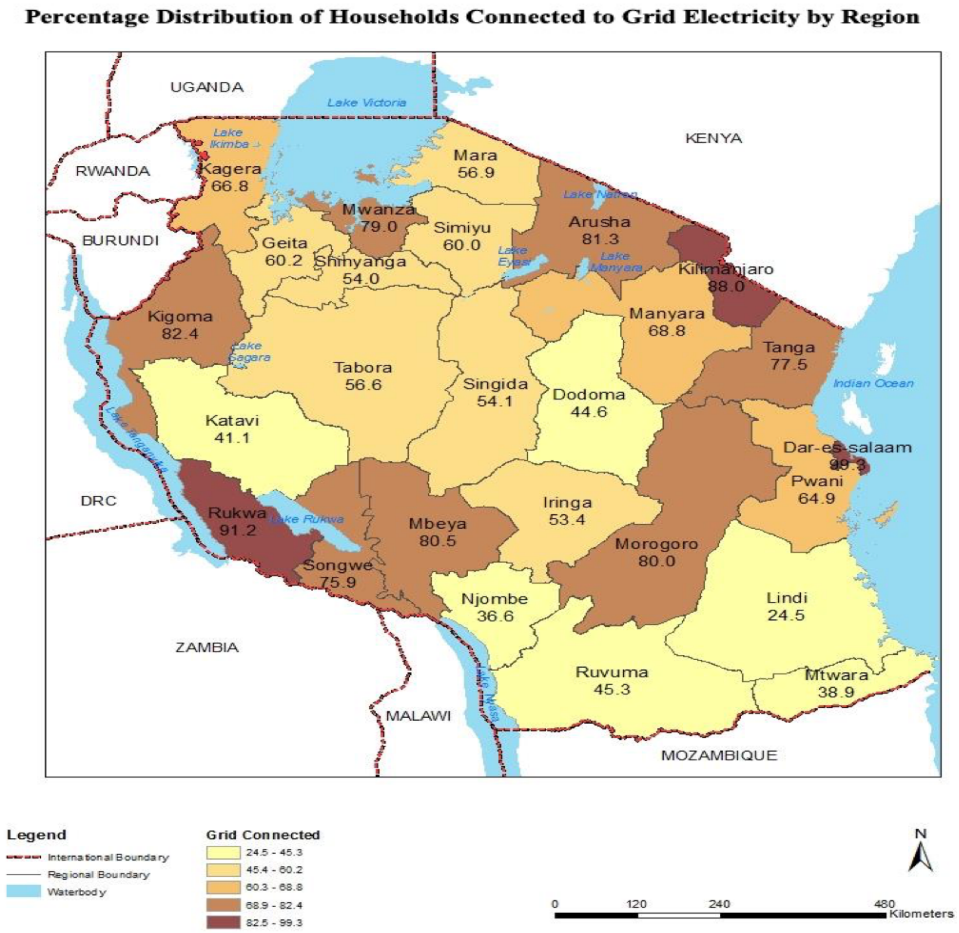


Figure 9 % of households connected to the grid electricity on Tanzanian mainland



Within rural

Figure 10 % of households with grid Connection per region

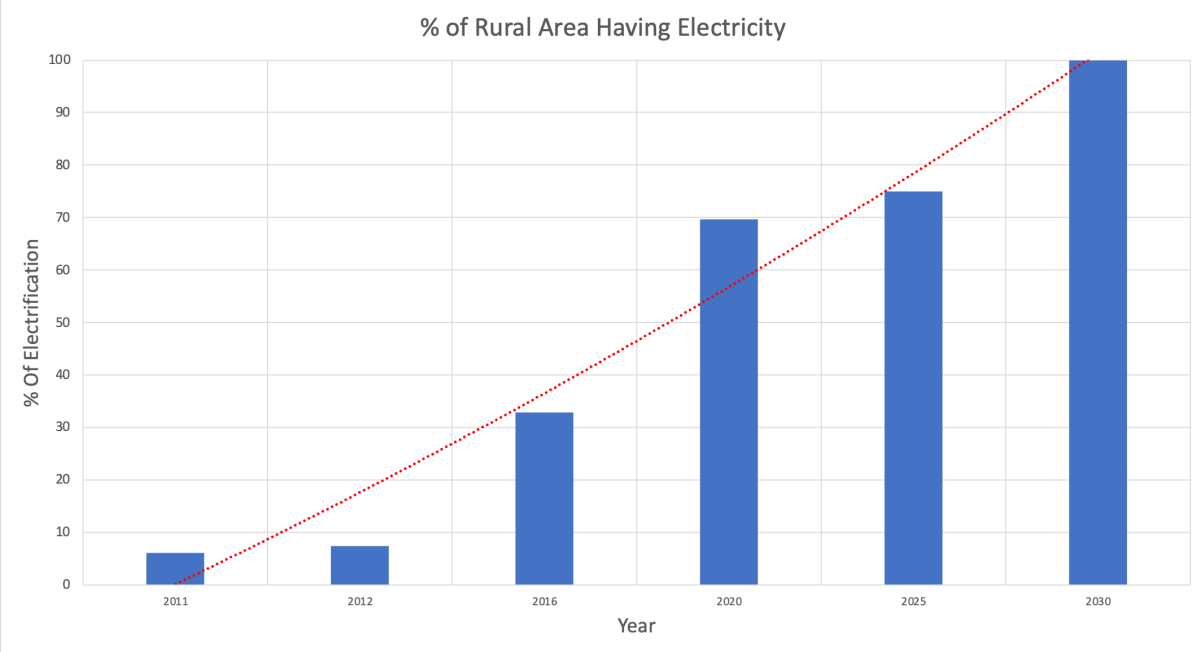


Figure 11 Trend for Electrification of Rural areas in Tanzania

Tanzania Mainland, an average of 58.6 percent of heads of households considered access to electricity had influenced an increase in business activities and extended hours of doing business in the evening. Both female and male-headed households in rural areas agreed with this fact (60.5 and 58.1 percent, respectively). With this positive feedback, there are future for the total electrification of all the rural areas in Tanzania, as seen in Graph xx
From the above study, it can be concluded that there is an increasing trend of electrification in Tanzania. This conclusion can help us draw a positive co-relation, a directly promotional relation between electrification and demand for low voltage copper cables. The current Tanzanian copper cable market value is estimated to be about 150 million US $ per annum.

Manufacturing

Process Flow

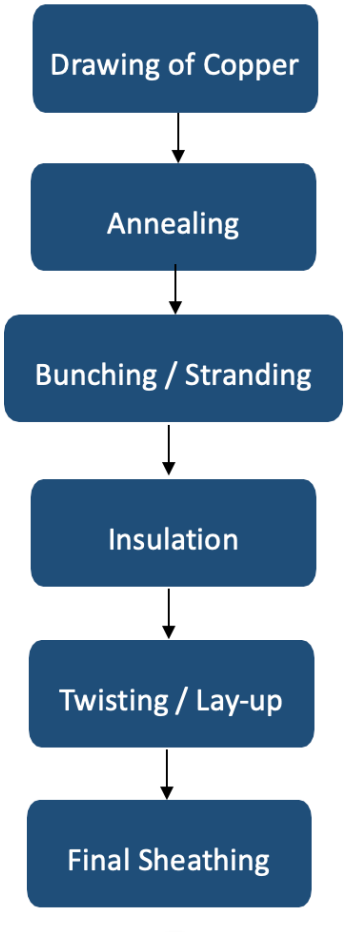


Figure 12 Typical copper cable production process

1. Drawing Process: The EC Grade continuous cast copper rod of 8 mm diameter is taken for drawing on a wire into different wire diameters. The process of drawing involves the utilization of diamond dies to obtain the most satisfactory results out of it. The rod and dies are put into a coolant and are proofed with an industrial lubricant. This helps maintain the temperatures and carry the drawing process in a

controlled manner. Here, the copper coils get the finest treatment to reach the best of their utility in industrial applications.

2. Annealing Process**:** Once the drawing operation is over, the coils of the drawn wire are put into an electric furnace in a pot to remove the internal stresses and increase its toughness. This process is known as Annealing. In this course, electrical current is passed through the wire for a second at a temperature of 1000oFv. This is an exact and controlled operation. Annealing is performed using water. This process makes sure that no oxidation takes place since it could overheat and burn the coil.
3. Bunching / Stranding Process**:** After the wires are annealed, they are wound on reels and put for bunching/ stranding on the wire stranding machines to process them into the different size range of twisted wires. These are then passed through the nuzzling process to get a smoother surface. Here, two other wires are stranded following a proprietary formula, and the twist length can vary anywhere from two to seven inches. The bunching process follows the ergonomic techniques and the latest tools to achieve optimum quality within time.
4. Insulation/ Sheathing: This is a work stage in which plastic raw material is melted and extruded at high pressure and temperature, forcing it into the cable's structure. Extrusion is most commonly used for wire insulation and to form the cable's outer sheath.
5. Twisting / Layup: A work stage in which the different elements of the cable are combined; it can be completed in a single step or several steps.

Raw Materials

The raw materials required to manufacture copper wires are copper, PVC, and color pigments. A detailed view of raw materials used for manufacturing copper wires is mentioned below.

- PVC or Polyvinyl Chloride is a thermoplastic resin that can quickly soften with heat. Polyvinylchloride, a halogenated polymer (with chlorine), does not catch fire easily but emits poisonous gases and much smoke during combustion. They are used both as insulation and in sheaths.

- Copper (Cu) is a chemical element, a reddish, extremely ductile metal of Group 11 of the periodic table that is an excellent conductor of electricity and heat. Copper is found in the free metallic state in nature.

- Colour Pigment: The colour pigment used to manufacture copper wire is of two types of inorganic and organic. Also, several mixed-phase metal oxides are coming up in the market.

Production Flow

Manufacturing inputs and flow chart

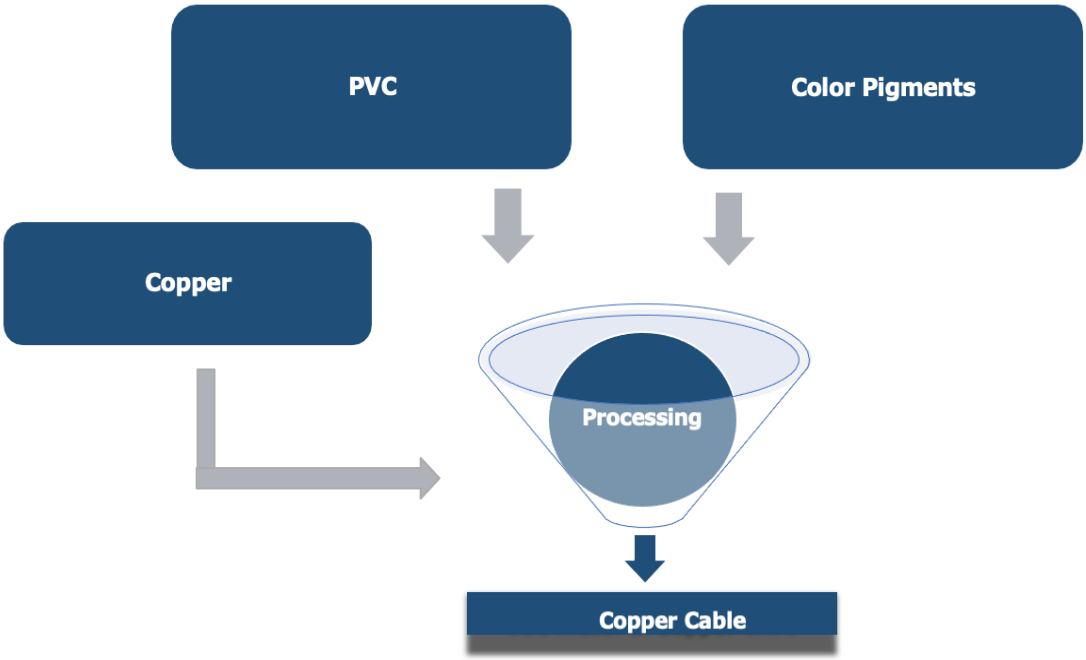


Figure 13 Inputs for copper cable manufacture

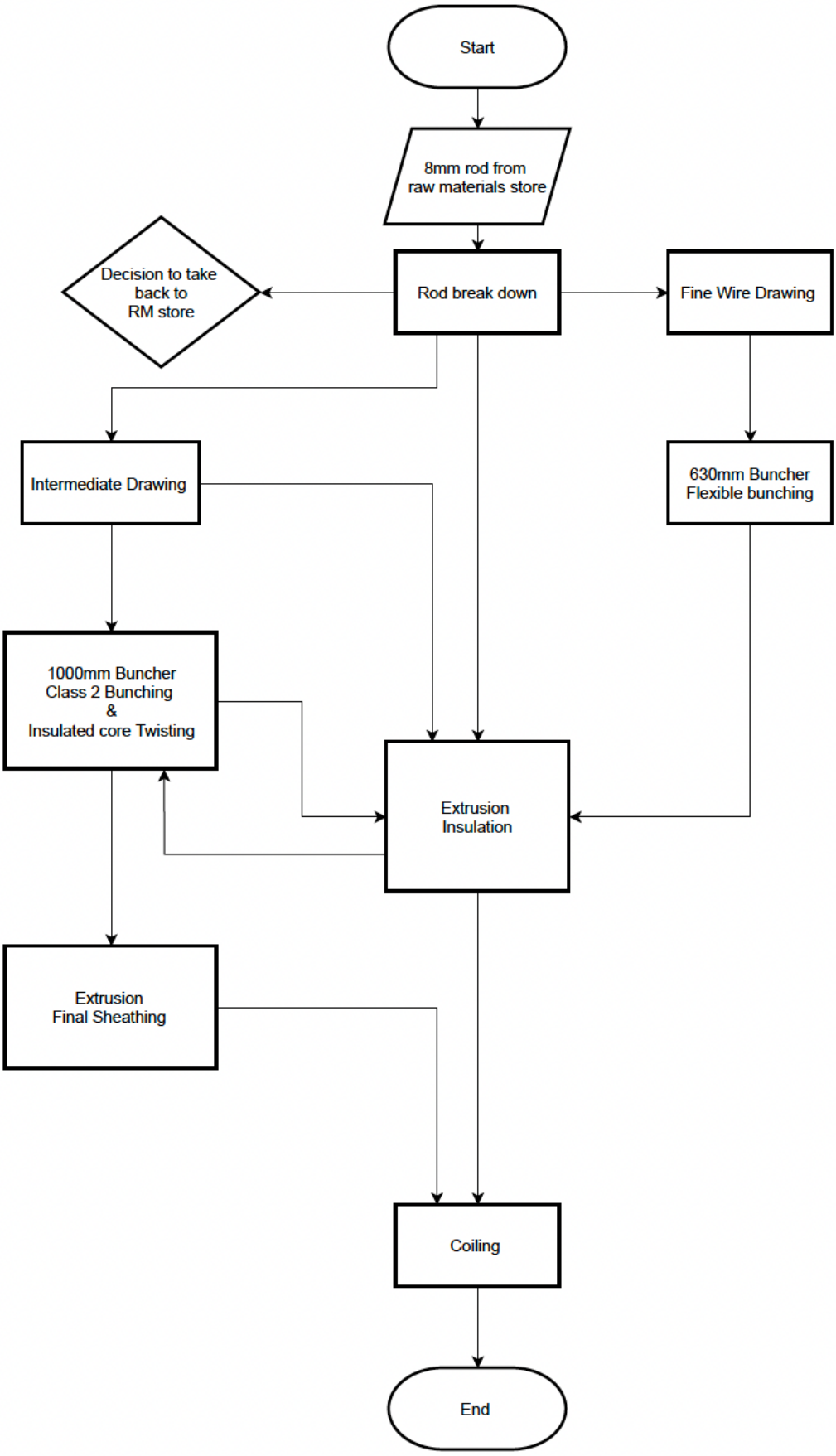


Figure 14 detailed production steps for low voltage cable manufacture

Manufacturing Uncertainty Analysis

Climatic Condition:

Climatic conditions greatly influence human efficiency and behavior, especially in the manufacturing sector, where various machines and equipment create hot atmosphere and are required to be handled with proper maintenance irrespective of weather. Generally, a comfortable climate is witnessed year-round in Tanzania, although there is the presence of regional variations. The tropical coast usually stays quite humid and hot, with heavy and reliable rainfall, particularly during the rainy season. The central plateau is cooler and arid In addition, there are two rainy seasons the heaviest rains known as masika usually fall from mid of March to May, and a shorter period of rain called vuli follows from November to mid of January. The dry season, with somewhat cooler temperatures, lasts from May to October. Thus, the management and creation of manufacturing facilities in Tanzania means entering the naturally vivid ecosystem where the facility will require continuous maintenance and evaluation.

Proximity to Markets:

Setting up a manufacturing plant in locations closer to consumers can bring significant benefits to manufacturers and consumers. It is especially valid in Tanzania, where a significant share of electrical essentials are import-centric. If the cost of inland production is high, the market will face huge losses. For instance, copper wire raw materials are generally imported and stored in airtight rooms to prevent corrosion/oxidation. Hence, production facilities established near markets and end use industry establishments enable the manufacturer to deliver optimum quality products to its customers. Moreover, due to changes in consumer lifestyle and living standards, the demand for various electrical equipment which are composed of copper wire cables is rising hence it is more profitable to set up a plant in Tanzania.

Supporting Industries:

Various services, such as communications, banking services, and other civil amenities play a vital role in the selection of a location for setting up a manufacturing plant. Dar es Salaam in Tanzania is comparatively well equipped with supporting facilities, availability of transportation and logistics companies nearby ports, facilitate an unhampered and quick delivery of raw materials.

Government Policies:

The policies executed by the Tanzanian government concerning the labor laws, building codes, safety, etc. are the factors that demand attention at the time of setting up a plant. To have a balanced growth of industries, the government bodies and agencies offer a package of incentives to entrepreneurs in particular locations. The incentive package may be in the form of exemption from tax and excise duties for a specific period, soft loan from financial institutions, subsidy in electricity charges, and investment subsidy. These initiatives help the companies to run their businesses with ease and optimize their profitability.

Mentioned below are some of the key initiatives taken by the Tanzanian government in order to facilitate the growth of the manufacturing sector

- The government's Sustainable Industrial Development Policy envisages Tanzania becoming a semi industrialized country over the next decade The government puts emphasis on only a few manufacturing areas.
- Tanzania's Export Processing Zones (EPZ) and Special Economic Zones (SEZ) are gaining pace and are assigned to geographical areas or industries that are designated to commence specific economic activities under special regulations. As of March 2018, there were 14 designated EPZ/SEZ industrial parks, of which 10 are in development, and 75 stand-alone EPZ factories. All these industrial parks and zones are provided special exemptions by the government The EPZ status gained factories requires the export of 80% or more of the goods produced, while SEZ status holding manufacturers has no export requirement, thereby allowing manufacturers to sell their goods domestically. However, EPZ status can also be extended to stand alone factories in any geographical location.
- In response to development of manufacturing sector, the Tanzania's Second Five Year Development Plan 2016-17 2020-21 prioritizes SEZ development in developing cities like Bagamoyo, Mtwara, Kigoma, Tanga, Ruvuma, Dodoma, Manyoni and the Kurasini Logistic Centre.

Sensitivity Analysis

Sensitivity analysis accounts for and measures all the internal factors that are prevailing in the manufacturing facility, which poses a direct impact on the operational output of the facility. Some key sensitivity analysis factors affecting the overall functioning of manufacturing facility include

Productivity of Employees

The workers assigned with various tasks on the manufacturing site can greatly influence the success of the complete operation Hence, the allocation of the right job and provision of appropriate training can enhance the output of the manufacturing site Whereas unskilled and unmotivated employees can hamper the quality of the product as well as the reputation of the brand.

Investment Intensity

The term investment intensity is defined as the change in capital stock concerning the same denominators. The underlying concern is with capital productivity ie. how efficiently the physical capital can be organized and utilized for manufacturing goods, in this case, copper wire This factor is heavily relying on decision making authorities and their capability to call proficient capital investment decisions.

Raw Material Quality

In copper wire manufacturing plants situated in Tanzania, the quality of products is highly dependent on the quality of procured raw materials, efficiency of each machine employee working in the premises, and the establishment of the adequately maintained storage facility in the absence of anyone criteria, the quality of copper wires can be significantly compromised

Vertical Integration

When a manufacturing company owns or controls its suppliers, distributors, or retail locations in order to gain control over its value or supply chain, it is termed vertical integration This strategic movement offers benefits such as reduced expenditure and improved efficiencies owing to the complete process Such activities may impact the capital investment during the initial period however, they can gain an impressive market share if they succeed in all the above mentioned operations For Tanzania based manufacturers, strategic plans such as long term agreements and mergers can also support the growth of their market incidence.

Finance

Introduction

Based on industrial data and CSS's current sales data, we envision that CSS will take two years to reach its target capacity of 300 tonnes annually. Their current purchases predominantly from Euro Cables Ltd are at 130 tonnes monthly.
The selling price used in our study is the average price calculated from 4 manufacturers listed below,

Africab Electrical Cables.
Euro Cables Limited.
MCL - Multi Cables Limited.
Master Cable Limited.

Our financial model suggests that there will be a significant requirement for working capital in the first three years, predominantly for the purchase of raw materials (copper).
Our model accounts for a production capacity of 33% initially—currently, CSS consumption of copper is equivalent to 100 tonnes. We have accounted for 10% growth in sales every year based on CSS history with low voltage cable sales in the previous years. The total capacity recommendation is 300 tonnes at 70%, which would yield a 10.48% profit.

Capital Requirements & Strategy

Implementing this project required a total capital investment of $11,100,00, out of which CSS will need $7,700,000 from an external source. This financial evaluation covers five years, and the projected return on investment is eight years.

Capital Requirements and Strategy

Table 1 Capital Requirement

SL. NO.	Particulars	Equity	Loan	Total
		$	$	
1	LAND	1,000,000	-	1,000,000
2	Building and Civil works	1,000,000	2,000,000	3,000,000
3	Machinery Production & Utilities)	-	2,000,000	2,000,000
4	Test Equipment's & Apparatus	-	400,000	400,000
5	Local machinery	-	500,000	500,000
6	Customs Duty & Others	500,000	-	500,000
7	Internal Freight	100,000	-	100,000
8	Vehicles & Forklift	100,000	300,000	400,000
9	Furnitures & Fixtures	200,000	-	200,000
10	Preliminary & Start-up	500,000	-	500,000
0	Sub - Total	3,400,000	5,200,000	8,600,000
12	Working Capital	-	2,500,000	2,500,000
0	Total	**3,400,000**	**7,700,000**	**11,100,000**

Cash-flow statement

Based on CSS existing sales of copper wire we were able to make cash flow projections for a 5-year period.

Source of Fund

Table 2 Source of Funds

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Equity	3,400,000	-	-	-	-	-
Net Profit Before Interest and tax	-	1,046,641	2,752,965	4,182,692	4,907,891	5,289,799
Less Depreciation	-	500,000	500,000	500,000	500,000	500,000
Term Loan	5,200,000	-	-	-	-	-
Revolving credit	2,500,000	-	-	-	-	-
Totals	11,100,000	1,546,641	3,252,965	4,682,692	5,407,891	5,789,799

Use of Funds

Table 3 Use of Funds

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Capital expenditure	5,800,000	-	-	-	-	-
Current assets	2,500,000	-	-	-	-	-
Repayment of loan	-	1,100,000.00	1,100,000.00	1,100,000.00	1,100,000.00	1,100,000.00
Corporate taxes	-	285,706	801,847	1,235,008	1,456,810	1,575,625
Payment of Interest	-	94,286	80,143	66,000	51,857	37,714
Totals	8,300,000	1,479,992	1,981,990	2,401,008	2,608,667	2,713,340

Cash Surplus	2,800,000	66,648	1,270,976	2,281,685	2,799,224	3,076,459

Opening balance	-	-	66,648	1,337,624	3,619,308	6,418,532

Closing balance	-	66,648	1,337,624	3,619,308	6,418,532	9,494,991

Income Statement (USD $)

Table 4 Income Statement

	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
	Capacity utilization	33%	45%	55%	65%	70%
APP B	Annual Sales	19,999,800	27,000,000	33,000,000	39,000,000	42,000,000
APP C	Less Cost of Goods Sold	17,575,159	22,744,155	27,248,695	32,574,082	35,135,628
	Gross Profit	2,424,641	4,255,845	5,751,305	6,425,918	6,864,373
APP D	Less admin	428,000	465,880	507,113	551,977	601,319
APP E	Less Marketing	950,000	1,037,000	1,061,500	966,050	973,255
	Operating Profit	1,046,641	2,752,965	4,182,692	4,907,891	5,289,799
APP F	Less Financial	94,286	80,143	66,000	51,857	37,714
	Nt Profit Before Tax	952,355	2,672,822	4,116,692	4,856,034	5,252,084
	Tax	285,706	801,847	1,235,008	1,456,810	1,575,625
	Net Profit	666,648	1,870,976	2,881,685	3,399,224	3,676,459

Gross Profit To COGS	13.80%	18.71%	21.11%	19.73%	19.54%

Net Profit to COGS	3.79%	8.23%	10.58%	10.44%	10.46%

Statement of Financial Position

Fixed and Current Assets

Table 5 Fixed and Current Assets

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Cash and bank Balance	-	66,648	1,337,624	3,619,308	6,418,532	9,494,991
Other Current assets	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Fixed assets	8,600,000	8,100,000	7,600,000	7,100,000	6,600,000	6,100,000
Total Assets	11,100,000	10,666,648	11,437,624	13,219,308	15,518,532	18,094,991

Equity and Liabilities

Table 6 Equity and Liability

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Term Loan	7,700,000	6,600,000	5,500,000	4,400,000	3,300,000	2,200,000
Capital (Equity)	3,400,000	3,400,000	3,400,000	3,400,000	3,400,000	3,400,000
Retained earnings	-	666,648	2,537,624	5,419,308	8,818,532	12,494,991
Total Equity and Liabilities	11,100,000	10,666,648	11,437,624	13,219,308	15,518,532	18,094,991

Appendix A: Working Capital requirement

Table 7 Working Capital Requirement

SL. NO.	Item	Tied Up	Amount
		$	$
1	Local Raw Materials	30 DAYS	200,000
2	Imported Raw Material	20 DAYS	1,600,000
3	Work In Progress	5 DAYS	200,000
4	Stock Of Finished Goods (At factory cost	1 DAY	200,000
5	Receivables (At Factory Cost)	30 DAYS	200,000
6	Cash Expenses	15 DAYS	100,000
	Total Working Capital	-	2,500,000

Appendix B: Capacity Utilization

Table 8 Production Schedule

Schedule of Production					
Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Capacity utilization	33%	45%	55%	65%	70%
Total Capacity in MT	300 TONS	300 TONS	300 TONS	300 TONS	300 TONS
On Capacity	100.00	135.00	165.00	195.00	210.00

Appendix C: Annual Sales

Table 9 Annual Sales

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Units Per MT of Copper (1.5mm^2 cable)	750	750	750	750	750
Prices per Unit	22.22	22.22	22.22	22.22	22.22
Sales in $	19,999,800	27,000,000	33,000,000	39,000,000	42,000,000
Sales $ per month	1,666,650	2,250,000	2,750,000	3,250,000	3,500,000

Appendix D:

Cost of Raw material

Table 10 Cost of Raw Materials

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Copper per Tonne $	9,700	9,700	9,700	9,700	9,700
Copper Wire in $	11,639,884	15,714,000	19,206,000	22,698,000	24,444,000
5% Premium $	581,994	785,700	960,300	1,134,900	1,222,200
PVC Cables in $	600,000	620,000	650,000	1,361,880	1,466,640
Cost Of Raw Material $	12,821,878	17,119,700	20,816,300	25,194,780	27,132,840

Cost of Goods Sold

Table 11 Cost of Goods Sold

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Raw materials & direct cost	12,821,878	17,119,700	20,816,300	25,194,780	27,132,840
Duties and taxes	1,923,282	2,567,955	3,122,445	3,779,217	4,069,926
Factory Wages & Salary $	600,000	660,000	726,000	798,600	878,460
Prime Cost $	15,345,159	20,347,655	24,664,745	29,772,597	32,081,226
Factory overhead Expenses $	2,230,000	2,396,500	2,583,950	2,801,485	3,054,402
Cost Of Goods Sold $	17,575,159	22,744,155	27,248,695	32,574,082	35,135,628

Factory Overhead Expenses

Table 12 Overhead Expenses

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Capacity utilization	33%	45%	55%	65%	70%
Rent, rates, taxes	600,000	660,000	726,000	798,600	878,460
Insurance (0.5% on Machinery	25,000	25,000	25,000	25,000	25,000
Transport	50,000	51,000	52,000	53,000	54,000
Depreciation	500,000	500,000	500,000	500,000	500,000
Utilities	1,000,000	1,100,000	1,210,000	1,331,000	1,464,100
Stores And Repairs	40,000	44,000	52,800	73,920	110,880
Entertainment & Mics	15,000	16,500	18,150	19,965	21,962

Appendix E: Administration cost

Table 13 Administration Cost

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Administrative salary	300,000	330,000	363,000	399,300	439,230
General Expense					
Printing and Stationery	3,000	3,330	3,530	3,565	3,601
Telephone, Fax Postage etc	5,000	5,550	5,883	5,942	6,001
Travelling expenses	30,000	33,000	36,300	39,930	43,923
Depreciation and write-off	50,000	50,000	50,000	50,000	50,000
Miscellaneous	40,000	44,000	48,400	53,240	58,564
Total Administration Cost	428,000	465,880	507,113	551,977	601,319

Appendix E Marketing expense

Table 14 Marketing Expenses

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Salary	300,000	330,000	363,000	399,300	439,230
Advertisement	200,000	216,000	198,000	117,000	84,000
Market Promotion Expenses	200,000	216,000	198,000	117,000	84,000
Transportation & delivery	250,000	275,000	302,500	332,750	366,025
Total Marketing Expense	950,000	1,037,000	1,061,500	966,050	973,255

Appendix F: Financial expenses

Table 15 Financial Expenses

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Interest on Borrowing	94,286	80,143	66,000	51,857	37,714

Loan Disbursement Schedule

Table 16 Loan Disbursement Schedule

Period of Disbursement	Purpose	Amount	
		USD	TZS
01/01/2022	Construction of boundary and infrastructure	$1,500,000	3,525,000,000
15/01/2022	Purchase of Machinery	$2,000,000	4,700,000,000
01/06/2022	Purchase test equipment's & apparatus	$400,000	940,000,000
01/07/2022	Construction	$500,000	1,175,000,000
01/08/2022	Purchase of vehicles & forklifts	$300,000	705,000,000
01/09/2022	Working capital purchase of materials	$2,000,000	4,700,000,000
01/10/2022	Local Machinery	$500,000	1,175,000,000
01/11/2022	Working capital purchase of materials	$500,000	1,175,000,000
Total Borrowing		$7,700,000	18,095,000,000