Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

Feasibility study for establishing a clinker mining and cement

Production plant in

Tanzania

2023-December

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

Feasibility study for establishing a cement factory in Tanzania

Contents:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

13- Percentage of net profits (investment return) and break-even point (quantity and time)

14- Laboratories and quality

15- Energy and water

16 - Infrastructure and construction for production lines, buildings, warehouses and maintenance workshops

17- Manpower and jobs

18- Transportation and cars

19- Residential city and medical units

20- The time period for establishing the factory

21- Training and trial operation

22- Marketing plan and market analysis

23- Advertising, advertising and agencies

24- Environment and safety

25- Recommendations and conclusion

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

1- Introduction:

Cement is considered one of the most important raw materials used in building and construction, as it is used in the manufacture of concrete, bricks and various buildings. The cement factory is one of the large industrial projects that requires huge investments and produces large profits due to the large global demand for all types of cement and due to population growth that requires increased building and infrastructure construction.

2- Why did we choose cement as an investment project and Tanzania as the place to establish the project?

1-2) Tanzania is a rapidly developing country with an economy growing at 6% annually.

This economic growth is driven by population growth, urbanization, and investments in infrastructure. This increases the demand for cement, as cement is used in many industries, including building, construction, infrastructure, and manufacturing.

2-2) Tanzania has rich resources of raw materials needed for cement production, including limestone, clay and sand. This provides an opportunity to establish a cement plant in Tanzania to meet the growing local demand.

3-2) Our company also owns an area of 100 hectares of land in Tanzania that contains the raw materials needed to manufacture clinker and cement of all kinds.

3- Objectives of the project study:

1-3) this study aims to provide a comprehensive vision for establishing a clinker mining line and a cement factory with an annual production capacity of 18 million tons m.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2-3) The study includes the definition of cement and its types, the materials involved in its manufacture, production machines and lines, the total cost of the project, the workforce, the project implementation period, the land area and infrastructure, the return on investment, the marketing plan, the break-even point, and the capital recovery period. , recommendations and others according to the details of the study

3-3) the study aims to evaluate the economic feasibility of building a cement factory in Tanzania with an annual production capacity of 18 million metric tons.

4- Definition of clinker, cement, and types of cement:

1-4) Clinker: It is a solid material that is made from many raw materials such as calcite and bauxite silica. For the production of Portland cement and others.

2-4) Cement: It is a bonding material consisting of a mixture of raw materials, such as limestone, clay and sand, which are ground together and then heated in a rotary kiln until

Reach high temperature. When water is added to cement, it reacts to form a solid paste that can be used in construction

3-4) Types of cement:

There are many different types of cement, which differ according to their components and properties. The most important types of cement are:(Portland Cement, Ordinary), (OPC1-Ordinary Portland Cement)

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

1-4) Clinker: It is a solid material that is made from many raw materials such as calcite and bauxite silica. For the production of Portland cement and others.

2-4) Cement: It is a bonding material consisting of a mixture of raw materials, such as limestone, clay and sand, which are ground together and then heated in a rotary kiln until Reach high temperature. When water is added to cement, it reacts to form a solid paste that can be used in construction

3-4) Types of cement:

There are many different types of cement, which differ according to their components and properties.

The most important types of cement are:

(Portland cement, Ordinary), (OPC1-Ordinary Portland Cement)

It is the most common type of cement, used in a variety of applications, such as building, construction and infrastructure, and is characterized by its slow hardening.

Its price is lower than quick-hardening Portland cement

2- Rapid Hardening Portland cement (CRS) :(Portland cement, Rapid Hardening)

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

This type of cement is characterized by its ability to harden more quickly than regular Portland cement, which makes it suitable for applications that require speed.

In hardening, such as ready-mixed concrete construction, its price is higher than ordinary Portland cement

A-Factors affecting the hardening speed of Portland cement

B- Type of raw materials: The quality of raw materials used in cement production affects the speed of hardening. For example, the use of limestone

High purity to produce fast hardening cement

C- Mixing ratio: The mixing ratio between raw materials affects the speed of hardening. For example, increasing the ratio of lime to other raw materials leads to the production of fast-hardening cement.

Temperature: Temperature affects the speed of solidification. For example,

D-higher temperature leads to acceleration of the solidification process

E- Environmental conditions: Environmental conditions, such as humidity and temperature, affect the speed of hardening. For example, high humidity and temperature lead to accelerated hardening.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

3- Alkali Resistant Cement (Low-Reactivity Cement), (LRC):

It is a type of cement characterized by high resistance to alkaline chemicals, and is used in construction in areas containing alkaline soil.

It is specifically designed for use in applications that are exposed to alkaline environments, without being exposed to corrosion or destruction, and this makes it a suitable choice for applications that

Requires long-term strength and durability in alkaline environments

Technology is used to manufacture alkali-resistant cement. In this technology, mineral slag, such as iron slag or steel slag, is combined with conventional cement materials

Such as limestone and clay. The use of slag improves the resistance of cement to alkalis. Slag Cement

Alkali-resistant cement is used in a variety of applications, such as:

Water and sewerage - power plants - water treatment facilities - waste treatment systems - water pipes

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4- Heat resistant cement: (Heat Resistant Cement),(HRS)

It is a type of cement characterized by high heat resistance, and is used in construction in areas exposed to high temperatures, such as ovens, chimneys, and stoves.

5- White cement: (White Cement), (WPC)

It is a type of cement characterized by its white color, and is used in construction in areas that require an aesthetic appearance, such as building facades, tiles, and plaster work.

5- Materials used in the cement industry:

The cement industry depends on a mixture of raw materials such as:

Limestone, clay, gypsum, silica sandstone, aluminum silicate, and calcium aluminate. These materials represent about 95% of the weight of cement and other materials used in the cement industry are the chemicals that are used to control the chemical reaction process that occurs among the raw materials

6- The land on which the factory is built:

1-6) Area: Our Company owns land in Tanzania to establish a cement factory project with an area of (100 hectares), which is sufficient to establish the project on it.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

It includes support and logistical services for the project, such as: the factory, administrative buildings, storage facilities, and infrastructure.

2-6) Raw materials: The land was chosen because it provides the raw materials necessary for the production of cement, such as limestone, clay, and sand, and this helps to

Reducing transportation costs and market competition in cement prices with others.

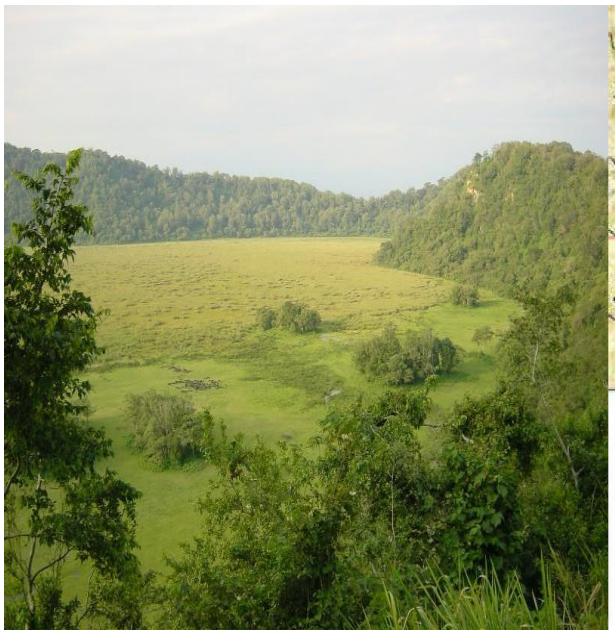
3-6) Licenses: We have the necessary government licenses to establish the project on this area of land and environmental clearings

4-6) Infrastructure: The land is connected to various transportation routes, which will facilitate the transportation of cement to local and international markets

5-6) Environment: The location of the land in an area with a suitable environment for cement production, and environmental and social safety factors have been taken into account

7- Geological surveys and laboratory analyses:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com



Tanzania is located in eastern Africa, bordered to the north by Kenya and Burundi and to the south by Mozambique

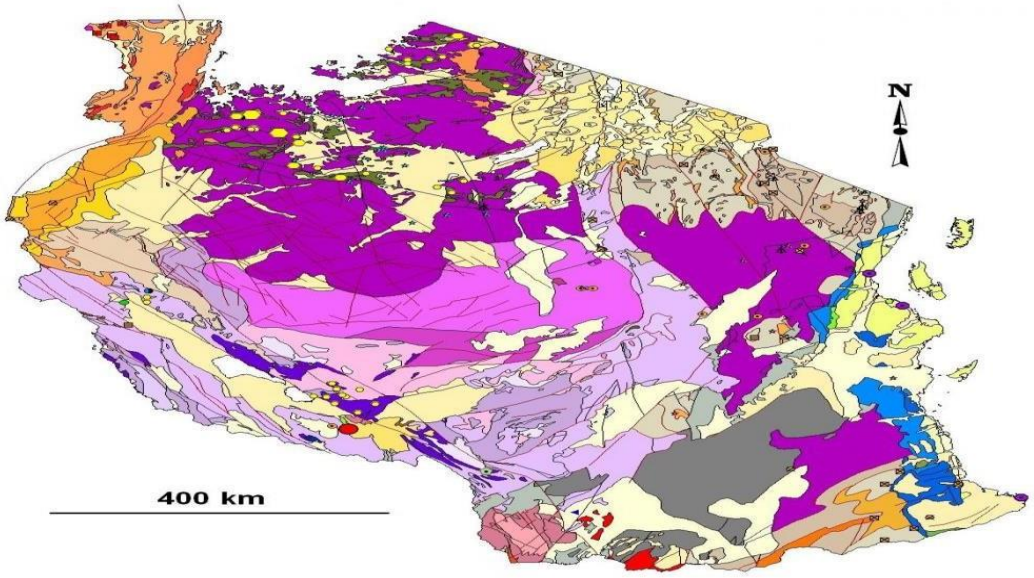
Malawi and Zambia, to the east is the Indian Ocean, to the west is the Democratic Congo, and to the northwest is Rwanda

The area of Tanzania is 945,087 km2, and Tanzania is divided into 25 provinces, and the capital is Dar AL Salaam.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

Waterfront of the city of Mwanza in Tanzania:

(Tanzania Geological Map)



Industry:

1- It represents about 5% of economic production, the most important of which is the food industry, in addition to the fertilizer, textile, and petroleum industries. There are factories for aluminum, cement, paper, sugar, and iron

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2-Mining. It constitutes less than 1% of the economic production in the country, where diamonds, alum, coal, and gold are extracted

The soil:

A- Tanzania is poor in agricultural lands rich in fertilized humic substances, except for aquatic and volcanic lands. High temperatures lead to an increase in the rate of oxidation, and heavy rains also wash away phosphate and nitrogenous substances from the soil in the part from which plant roots take their food, but tree roots protect the soil. From erosion, tree leaves covering the soil mitigate the impact of heavy rains. The leaves and fruits of trees provide the soil with a layer of humus, which alleviates its poverty and compensates for the loss of nutrients. Several types of soil can be distinguished in Tanzania due to its landfill nature. There is red mountain soil, black soil resulting from the decomposition of volcanic products, and gray soil in dry areas.

B- According to the geological laboratory survey, there are raw materials for the cement industry in Tanzania in several regions, and they can be divided into three main types:

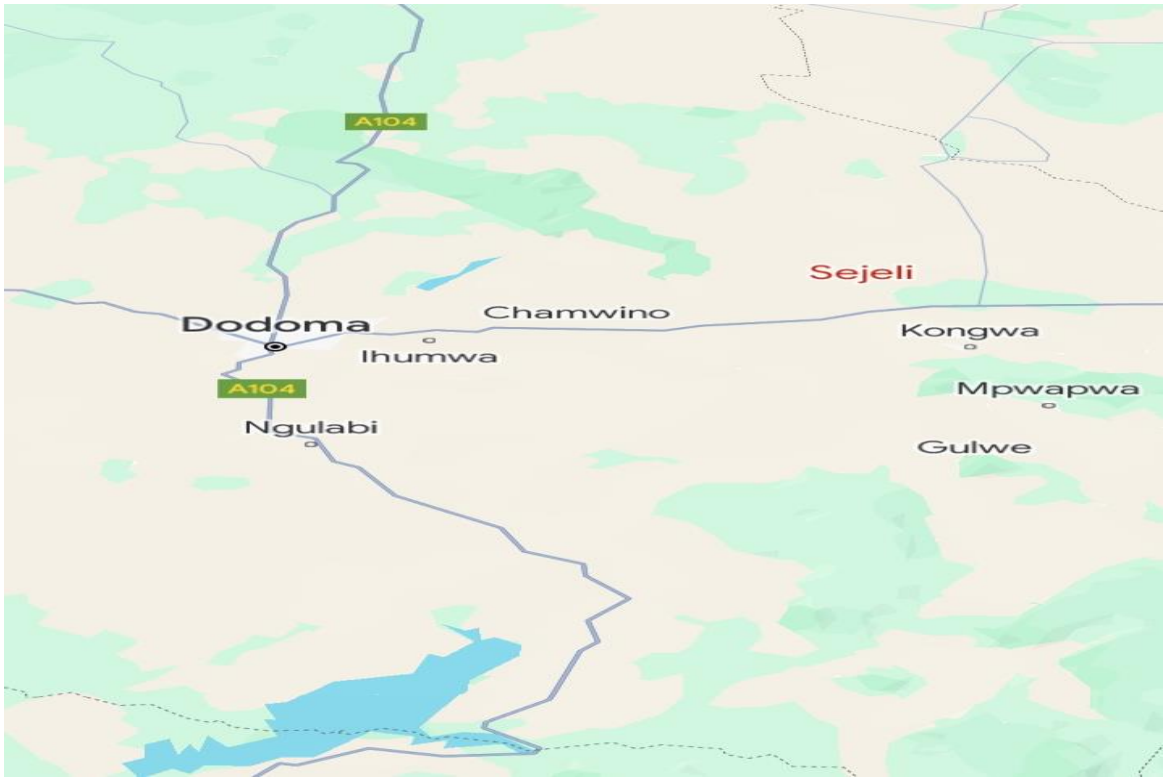
Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

1- Limestone: It is the main material for the cement industry, and is available in large areas of Tanzania, including Morogoro districts, Tanga, Sahel, and Rukia.

2- Lime: It is a secondary material for the cement industry, and is available in limited areas of Tanzania, including Morogoro, Tanga, and Sahel provinces.

3- Chalk: It is a secondary material for the cement industry, and is available in limited areas of Tanzania, including the provinces of Morogoro, Tanga, and Sahel.

The factory's location is located at kongwa district in Dodoma region in Tanzania, as the map below indicates:



Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4- Percentages of raw materials according to laboratory analyses:

Laboratory analyzes were conducted on raw materials for the cement industry in Tanzania, and the results showed that the percentages of raw materials are as follows:

A- Limestone: (calcium carbonate CaCO3 (80 - 70) %

B- Hydrated lime is the same as limestone, exposed to heat to get rid of water: (10-20) %

C- Chalk is the same as calcium carbonate, i.e. soft limestone that contains a high percentage of calcium 10%:

These percentages are approximate and may vary depending on the region from which the raw materials are extracted.

5- Areas with high concentration of raw materials:

There are some areas in Tanzania with a high concentration of raw materials for the cement industry, and the most important of these areas are the following:

1- Tanga region: It is located in northeastern Tanzania and contains large reserves of limestone and lime.

2- Morogoro region: It is located in southeastern Tanzania and contains large reserves of limestone and lime.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

3- Sahel region: It is located in eastern Tanzania and contains large reserves of limestone.

These areas are of great importance to the cement industry in Tanzania, and the raw materials needed to operate cement factories are available in an economical manner

(Image of limestone rocks):

(pure limestone)

(A type of shell limestone)

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

8- Methodology in studying the feasibility of a cement factory project in Tanzania:

1- Market analysis:

It includes assessing current and future demand for cement in Tanzania and considering factors such as population growth, urbanization, and ongoing or proposed construction projects.

2- Cost analysis:

It includes estimating the costs associated with establishing and operating a cement plant. The feasibility study takes into account factors such as the cost of land, equipment, labor, energy, and transportation.

3- Revenue Analysis:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

It includes estimating the expected revenues from selling cement. The feasibility study takes into account factors such as cement prices, the factory's production capacity, and expected demand.

4- Risk analysis:

It includes evaluating the potential risks associated with establishing and operating a cement factory

The feasibility study takes into account factors such as political risks, economic risks, technical risks, and risks outside the calculations such as environmental risks

5- Conclusion:

Includes a summary of the main findings of the feasibility study. The conclusion should state whether the project is economically feasible or not

Below are some of the specific factors taken when conducting a feasibility study for setting up a cement plant in Tanzania:

1- Location: The factory location was carefully chosen to ensure access to sources of raw materials, labor, and markets

2- Factory technology: The appropriate technology for the cement factory was chosen taking into account factors such as production capacity, cost, and efficiency

3- Energy: Sufficient energy has been ensured to operate the cement plant

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4-Environment: Taking into account the potential environmental impacts of establishing and operating a cement factory

9- Technical study and project technology supported by pictures of equipment, machines and production lines:

The technical study of the factory includes the following:

1-Determine the techniques and equipment needed for production

2-Factory design and production facilities

3-Production cost estimation

4- Location features (Tanzania):

Tanzania is a developing country that is growing rapidly, and is expected to continue growing in the coming years. This economic growth is accompanied by an increase in demand for cement, as cement is used in many industries, including building, construction, roads and bridges. Tanzania has rich natural resources that can be used in cement production, including limestone, clay and sandstone. However, there is currently only one cement factory in Tanzania, which is unable to meet the growing demand for cement. Therefore, setting up a new cement factory in Tanzania will be a profitable investment. The factory will provide new job opportunities and will help develop the Tanzanian economy

5-Technical objectives of the study:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

A- This technical study aims to determine the technical requirements necessary to establish a cement factory in Tanzania with a production capacity of 18 million metric tons and 6 lines. The factory will be established and operated in accordance with the latest international technologies and environmental standards with high efficiency for)producing all types of cement such as (ordinary Portland – resistant- finishing cement)

B-This technical study relies on a range of sources, including information available from the current cement factory in Tanzania

C- Information available from cement factories in other countries. International standards for the cement industry

D- Results: The results of this technical study indicate that establishing a cement factory in Tanzania with a production capacity of 18 million metric tons and 6 lines will require:

1-Land: 100 hectares

2-Buildings, facilities, infrastructure and logistics services

3-Equipment, machinery, mills, furnaces, refrigeration, production lines and clinker transportation line

4-The factory requires annual consumption of raw materials in the following quantities:

4-1) Limestone: about 20 million tons

2-4) Clay: about 10 million tons

3-4) Sandstone: about 5 million tons

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4-4) the plant will produce about 18 million metric tons of cement annually

d- Recommendations:

Based on the results of this technical study, the following recommendations present themselves:

1-d) Choose a suitable location for the factory, close to sources of raw materials and target markets

2-d) Use the latest technologies and international standards in designing and building the factory

3-d) Conclusion: Establishing a cement factory in Tanzania with a production capacity of 18 million metric tons and 6 lines will be a profitable and important investment for the development of the Tanzanian economy.

Pictures of some of the factory's equipment, machines, and production lines:

1) Picture of the cement factory:

2) Visualize a comprehensive view of the factory:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

3) A picture of the mine works site:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4) Clinker transportation and production lines:

1-

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

-2

3)Silt transfer line:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4- Rotary kiln: to heat raw raw materials to produce clinker:

Dry curing ovens:

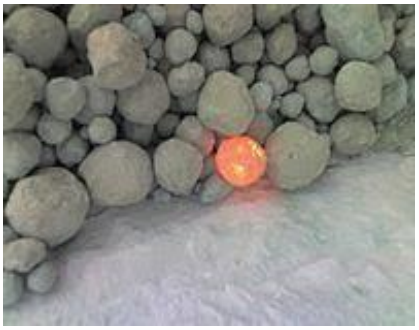
Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

Rotary kiln units:

5- Clinker: It is a solid material that is made from many raw materials such as calcite and bauxite silicate to produce

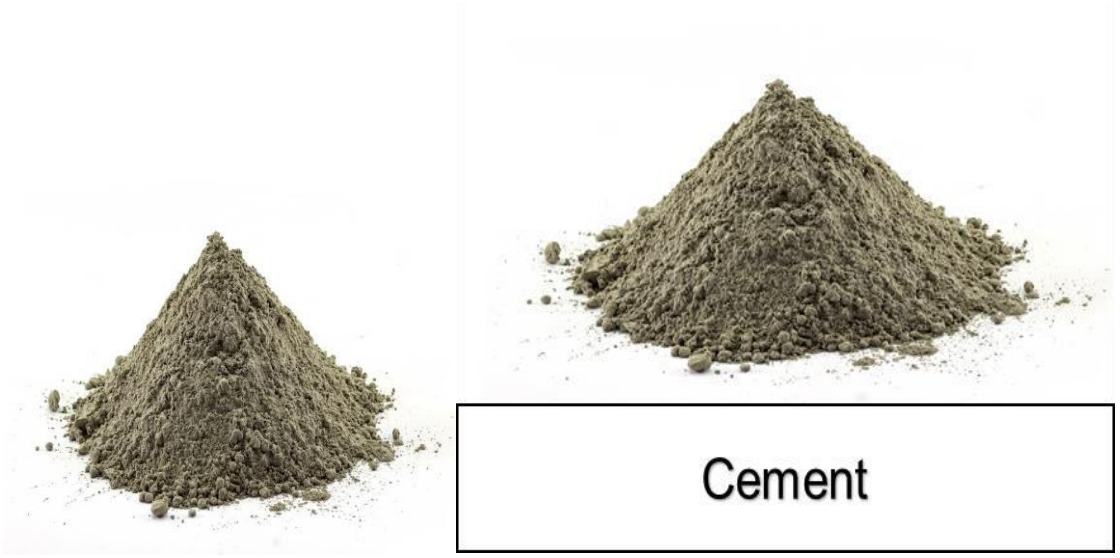
Portland cement and others:

Clinker



Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

6- Cement: It is the soft hydraulic bonding material resulting from grinding clinker and used in the formation of concrete mortar.



7- Raw material mill:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

8- Metal slag mill:

9- Tube mill:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

10- Machines, clinker transportation and production lines, cement production lines, their number, and full production capacity :

The equipment and machinery of a cement plant depend on the technologies used in production.

However, it generally includes the following:

The cement production process consists of several stages, and each stage has its own machines

The main production machines and lines in the cement factory include the following:

1-10) Raw material crushing line: used to crush raw materials, such as limestone, clay, and sand, into small pieces.

2-10) Raw material mixing line: In this line, raw materials are mixed together

3-10) Rotary kiln (heat treatment line): In this line, the mixture is heated to a high temperature of

4-10) Cooling tower (cooling line): In this line, the clinker resulting from the heat treatment process is cooled

5-10) Mills (grinding line): In this line, clinker is ground into a fine powder

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

6-10) Number of production lines: The number of production lines in the cement factory depends on the size of the factory and the type of cement produced, and a cement factory needs a capacity

An annual productivity of 18 million tons with about 6 production lines, each line producing 3 million metric tons of cement annually.

11- Project cost details:

The total cost of setting up a cement factory depends on several factors, such as the size of the factory, the type of cement produced, and the location of the factory. The total project cost includes the following:

1-11) Land cost: ($100 million)

2-11) Cost of administrative buildings, construction, infrastructure, warehouses, logistical support, research laboratory, and quality laboratory: ($260,000,000)

3-11) Cost of machinery, equipment, furnaces, mills, cooling towers, six cement production lines, etc.: ($1,284,000,000.00)

Details of its costs are as follows:

A- Raw material crushing machines, 6 lines = $48 million x 6 = $288 million

B- Raw material mixing machines, 6 lines = $21 million x 6 = $126 million

C- Rotary kiln: 6 = $80 million x 6 = $480 million

D- Cooling towers 6 = 16 million x 6 = $96 million

E - 6 fine grinding mills = $49 million x 6 = $294 million

4-11) Packaging and printing line machines: ($52,000,000)

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

5-11) Packaging and printing materials: ($33,000,000

6-11) Clinker transport line from the mine to the factory : ($150,000,000)

7-11) Expenses for water and fuel consumed in machinery and the electrical power conversion station: ($50,000,000)

8-11) The cost of an electrical power conversion station with a capacity of 140 megawatts: ($335,000,000)

9-11) the cost of transportation machines, cars, and their maintenance workshops: ($193,000,000)

10-11) The annual operating capital cost of the cement factory with an annual production capacity of 18 million metric tons: ($1,073,000,000) Its details are as follows:

Operating capital includes: expenses incurred during the factory's annual normal operating period, which are:

1- Raw materials expenses (raw materials) = $325,000,000

2- Fuel, mineral oil, and water consumption expenses = $50,000,000

3- Manpower expenses = $260,000,000

4- Expenses for consumption of packaging and printing materials = $33,000,000

5- Cost of transportation machinery, cars, and maintenance workshops: ($193,000,000)

6- The cost of the environmental study, awareness, fire equipment, firefighting system, environmental Safety and alarm: ($15,000,000)

7- The cost of advertising, marketing plan, and customer service: ($17,000,000)

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

8- Cost of government fees, licenses, taxes, miscellaneous items, guards, and security: ($5,000,000)

9- Periodic and annual maintenance expenses = $175,000,000

11-11) Fixed capital for the cement factory project = ($2,546,000,000.00) its details are as follows:

Where: It includes expenses that are incurred once when establishing the factory, which are:

1- Land cost = $100 million

2- The cost of machinery, equipment, ovens, mills, and cooling towers, six cement and other production Lines, and a clinker line = $1,434,000,000

3- The cost of administrative buildings, construction, infrastructure, warehouses, logistical support, Research laboratory, and quality laboratory = $260,000,000

4- The cost of the residential city with all its requirements = $365,000,000

5- Packaging and printing line machines: $52,000,000

6- The cost of an electric power conversion station with a capacity of 140 megawatts: $335,000,000

12-11) Quantities of raw materials required to produce 18 million metric tons of cement annually.

The raw materials needed to produce cement will be extracted from local mines on the land on which we will establish the cement factory, which are:

1- Limestone = 20 million tons

2- Clay (silt) = 10 Million tons

3-Sand = 5 million tons

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

13-11) Cost of raw materials, annual total = $325,000,000, where:

What the prices below represent is the cost of extracting one ton of raw materials needed by the cement industry, which will be extracted locally from the land on which the factory will be built:

1) limestone = 20 m tons x $15 = $300,000,000

2) Clay (silt) = 10 m tons x $10 = $100,000,000

3) Sand = 5 m tons x $5 = $25,000,000

14-11) The cost of training and employing a workforce of (800 – 1000) : ($260,000,000)

15-11) Cost of periodic and annual maintenance: ($175,000,000)

16-11)The cost of the residential city and its complete services for the workforce with medical health units: ($365,000,000)

17-11)The cost of the environmental study, awareness, fire equipment, extinguishing system, environmental safety and alarm: ($15,000,000)

18-11)Cost of advertising, marketing plan, and customer service: ($17,000,000

19-11) The cost of government fees, licenses, taxes, miscellaneous items, guards, and security: ($5,000,000)

(Table of total costs for the cement factory project with a production capacity of 18 million metric tons)

No.	Statement	Cost in(US$)	comments
1	Fixed capital (assets)	2,546,000,000.00	
2	Operating capital (working)	1,073,000,000.00	
3	Total cost of the project	3,619,000,000.00	

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

12- Financial analysis (unit cost - unit selling price - total revenues - net profits):

1-12)The cost of the unit produced in the cement factory and the selling price:

In production factories with large quantities, such as in the cement factory, the standard unit is the metric ton, and thus:

The cost of manufacturing a ton of Portland cement in Tanzania is governed by the following factors:

1- Type of cement produced

2- Production volume

3- Cost of raw materials

4- Labor cost

5- Energy cost

The cost of manufacturing a ton of Portland cement in Tanzania ranges between 60 US dollars and 80 US dollars, as:

1- The cost of raw materials per ton = $30

2- Labor cost per ton = $10

3- Energy cost = $20

4- The total cost per ton = $60

5- The selling price of a ton of Portland cement in Tanzania: The selling price of a ton of Portland cement in Tanzania varies according to many factors:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

1-Type of cement product

2- Production volume

3-Transportation cost

4-Market competition

The selling price of a ton of Portland cement in Tanzania ranges between 120 US dollars and 180 US dollars.

Therefore, the selling price of a ton of ordinary Portland cement in our factory = $120

2-12)Annual revenues of the project:

-The average annual revenues of a cement factory with an annual production capacity of 18 million tons are estimated at approximately $2,160,000,000

These revenues include sales of cement and other cement products, where:

18 million tons x $120 = $2,160,000,000,

where:

Total annual revenue from product sales = annual production quantity x unit sales price (metric tons)

= 18,000,000 metric tons x $120

= 2,160,000,000

12-3) Average net profits per ton of product:

1) **Net profits per ton = {sales price per ton (revenue per ton)} - {cost price per ton}**

= $120 - $60 = $60

2) **Net profits for a cement factory with an annual production capacity of 18 million metric tons. These profits include project revenues after deducting costs, as:**

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

Total annual net profits = annual product quantity x net unit profits of the product (profits per ton)

= 18,000,000 tons m x $60

= 1,080,000,000$

13- The percentage of net profits (investment return), the break-even point for the quantity of the product, and the break-even point time:

1-13) Percentage of net profits (return on investment):

The percentage of net profits is calculated according to the following formula:

Percentage of net profits = (net profits x 100) ÷ (total capital)

=($1,080,000,000 x 100) ÷ (3,619,000,

= 29.84 %

2-13) Calculating the break-even point:

1- Break-even point: It is the point at which total revenues equal total costs, meaning that the project makes neither a profit nor a loss.

2- We calculate the break-even point (according to the quantities produced in the factory) from the following formula:

Break-even point = total fixed costs / (selling price per ton - variable cost per unit)

Break-even point = ($2,546,000,000) ÷ ($120 – 75)

= 56,577,777 million tons of cement

That is, the project will achieve the break-even point when it sells (56,577,777) million metric tons of cement.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

Or the break-even point time = (quantity of sales at the break-even point) ÷ (annual production capacity)

= (56,577,777 million tons m) ÷ (18,000,000)

= 3.14 years

That is, the break-even point occurs after (three years and 51 days from the start of production and operation).

Where: The decimal ratio (0.14) is equivalent to 51 days of the 365-day calendar year.

3-13)Capital recovery period:

1- Capital recovery period: This is the period of time that the project needs to recover the value of the investment made in it.

2- Calculate the capital recovery period from the following formula:

(Total capital / annual net profits), where :

Capital recovery period = (3,619,000,000) ÷ (1,080,000,000)

= 3.35 years

Where: The ratio is 0.35 of a Gregorian year of 365 days, equivalent to 127 days in days.

That is, establishing the project will take 3 years and 127 days to recover the value of the investment paid in it

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

14- Laboratories and Quality:

Quality laboratories in the cement factory:

1-14) Quality laboratories are an essential part of any cement factory, as they play an important role in ensuring the quality of the final product. These laboratories include a variety of facilities and equipment needed to test raw materials and finished products

2-14) Types of quality laboratories in the cement factory: Quality laboratories in the cement factory are usually divided into two main sections:

1- Raw materials laboratories:

These laboratories test raw materials used in cement production, such as limestone, clay, and sand. The tests performed in these laboratories include determining the proportion of various elements in the raw materials, and determining the physical and chemical properties of these materials

2- Finished products laboratories:

These laboratories test finished products, such as cement and aggregate. Tests performed in these laboratories include determining the strength, water resistance and shrinkage properties of these products

3-14) Quality laboratory equipment:

The equipment used in quality laboratories in a cement plant varies depending on the type of tests being performed. This equipment includes:

1- **Chemical equipment: such as ovens, spectrometers, and electrolysis**

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2- Physical equipment: such as devices for measuring pressure, tension and contraction force

3- Optical equipment: such as microscopes and scanners

4-14) Laboratory materials: Quality laboratories in the cement factory need a variety of materials to operate, such as:

1- Chemicals: such as acids, bases, and salts

2- Raw materials: such as limestone, clay and sand

3- Final products: such as cement and aggregate (aggregate: a filler material added to concrete to improve its strength and hardness, and it consists of gravel and sand

5-14)Cost of quality laboratories:

The cost of quality laboratories in a cement factory varies depending on the size of the factory and the type of tests performed. The cost of laboratories and equipment used in them ranges between $20 and $30 million.

6-14) Cost of necessary materials:

The cost of the necessary materials used in quality laboratories in the cement factory varies depending on the type of materials used. In general, the cost of these materials can range between $2.5 and $5 million annually

In the case of a cement factory with an annual production capacity of 18 million metric tons, the cost of quality laboratories is as follows:

1- The cost of laboratories and equipment: $30 million

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2-Cost of necessary materials: $5 million

3-The total cost of quality laboratories for the cement factory = $35,000,000

7-14)Factors that affect the cost of quality laboratories: A group of factors affect the cost of quality laboratories, including:

1-Plant size: The larger the plant, the greater the need for larger capacity laboratories, and thus the higher the cost

2-The type of tests that are performed: The more complex the tests that are performed, the greater the need for more accurate and expensive equipment, and thus the higher the cost

3-Factory location: The prices of land and materials vary in different regions, and therefore the cost of laboratories and equipment used in them varies depending on

8-14(The importance of quality laboratories :

Quality laboratories play an important role in ensuring the quality of the final product in the cement plant. The advantages of having quality laboratories in a cement plant include:

1-Ensuring the quality of the final product: Quality laboratories help monitor the quality of raw materials and finished products, thus ensuring the quality of the final product

2-Reducing losses: Quality laboratories help reduce losses resulting from defective products, by detecting these products early

3-Improving productivity: Quality laboratories help improve productivity by ensuring the .efficiency of the production process

Therefore, quality laboratories are an important asset to any cement plant, as they play an important role in

Ensuring the quality of the final product and improving productivity

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

15- Energy required to operate the cement factory - water:

1-15) Types of energy needed to operate the cement factory: The cement industry requires a large amount of energy to operate the various processes, which can be divided into three main types.

1- Thermal energy:

It is used to heat raw materials to transform them into clinker, which is the basic material in cement. It provides the thermal energy needed to operate the cement plant

2- Mechanical energy:

It is used to operate various equipment used in the production process, such as mills and cranes. The mechanical energy required to operate a cement plant is about 20-30% of the total energy used

3- Electric energy:

It is used to operate various electrical devices used in the production process, such as lighting and control systems. The electrical energy required to operate a cement plant is about 10% of the total energy used

2-15) The amount of energy required to operate the cement factory,

The amount of energy required to operate a cement plant depends on several factors:

1- Production capacity: The greater the production capacity, the greater the amount of energy needed

2- Type of raw materials used: Some raw materials, such as limestone, require a greater amount of energy to heat than other raw materials, such as dolomite.

3- Technology used: Modern technologies lead to improved energy efficiency

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

Since the cement factory has a production capacity of 18 million tons, it requires an amount of energy:

1- The necessary thermal energy is about 50.6 - 54.4 MW/year.

2- The mechanical requirement is about 33.6-44.2 MW/year.

3-Electricity needed is about 15.8-32.1 MW/year

3-15) The energy cost of operating a cement factory:

1-The cost of thermal energy: about 50% of the total energy cost = $192.5 million

2 - The cost of mechanical energy is about 25% of the total energy cost = $96,250 million

3-The cost of electrical energy is about 25% of the total energy cost = $96,250 million

4-15)Water is a major need for the cement factory:

1-The amount of water for a cement factory in Tanzania:

The cement industry requires large amounts of water in its various operations, as the amount of water needed to produce one ton of cement ranges from 1.5 to 2.5 tons of water.

18,000,000 tons of cement x 1.5 tons of water = 27,000,000 tons of water The amount of water the factory needs per year

2-Water cost for cement plant in Tanzania:

The cost of water for a cement plant in Tanzania varies depending on the source of water and the location of the plant. If the source of water is groundwater, the cost will be less than surface water. The cost will also

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

be lower if the factory is located near the water source, as there will be no need to construct long pipelines to transport water

The cost of water for a cement plant in Tanzania is estimated at US$0.5 per cubic meter of water. Accordingly, the water cost for a cement plant with a production capacity of 18 million metric tons in Tanzania would be approximately US$13.5 million annually.

3- Water source for cement factory in Tanzania:

The water source for cement plant in Tanzania can be groundwater or surface water. The advantages of groundwater are that it is usually of high quality and provides large quantities of water. However, groundwater may be contaminated in some areas, and it may require significant investments to construct wells and pipelines

Surface water, such as rivers and lakes, is usually less expensive than groundwater. However, surface water may be of lower quality and provide smaller amounts of water. They may also be susceptible to pollution due to sewage or industry

In Tanzania, the water source for a cement plant can be groundwater or surface water. The choice of water source depends on many factors, such as the location of the plant, the cost of water, and water quality

An example of a cement plant with a production capacity of 18 million metric tons can be the cement factory in Tanzania. This factory is located in an area close to a groundwater source, as the cost of groundwater in this area is about 0.4 US dollars per cubic meter of water. Accordingly, the water cost for this plant will be approximately US$10.8 million annually

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

16 - Infrastructure and construction for production lines, buildings, warehouses, and maintenance workshops:

1- The project's infrastructure

Infrastructure: The site should be well connected by roads, railways and ports, which will facilitate transportation of cement to local and international markets.

Establishing a cement plant with a production capacity of 18 million metric tons in Tanzania requires an extensive and diverse infrastructure.

2- Roads and transportation: It requires the arrival of trucks transporting raw materials and finished products to the factory, and a railway line for transporting clinker from the land where the raw materials are to be transported to the washing basins, processing ovens and mills. It also requires access to emergency services and logistical support.

3- Water and sanitation: The factory requires large amounts of water to produce cement, and it also requires an effective sewage system to treat industrial wastewater.

4- Energy: The factory requires large amounts of electrical energy to operate production lines and other facilities

5- Communications: The factory requires an effective communication system to ensure communication between the various departments of the factory and outside it.

6- Fundamentals of production lines:

Cement production lines require strong foundations capable of supporting heavy loads. These foundations are usually made of reinforced concrete, and must be carefully designed and implemented to ensure safety and stability.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

7- Warehouses:

A cement factory with an annual production capacity of 18 million tons requires a storage area estimated at about 100 thousand square meters. This space includes warehouses for storing clinker and finished cement products

These warehouses are designed to suit the types of materials stored, and must be able to bear heavy loads.

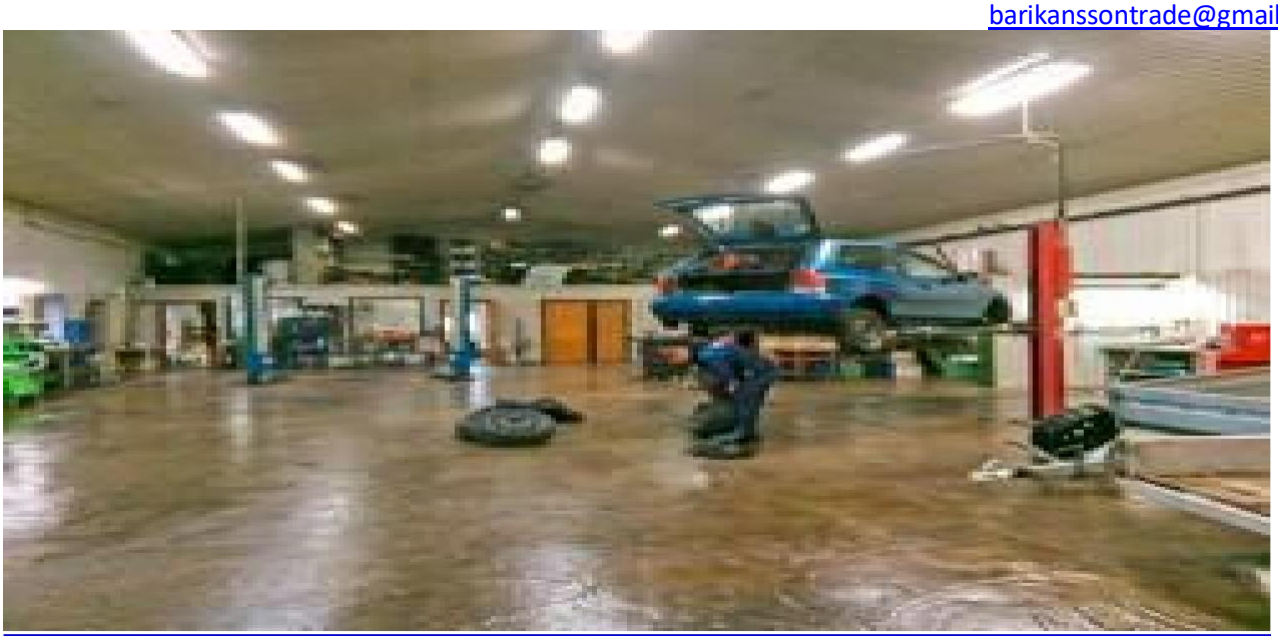
8- Cement factory maintenance workshops, machinery and cars:

The factory requires maintenance workshops to repair and maintain equipment and devices. These workshops must be equipped with all the tools and equipment necessary for maintenance, and must be specific to the types of equipment and devices being maintained.

9- Car garage:

The factory requires a garage to maintain and repair vehicles and equipment. This garage must be equipped with all the tools and equipment necessary for maintenance, and must be specific to the types of cars and equipment being maintained.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com



10- Security services:

The factory requires security services to protect against theft and fire. These services must be equipped with all necessary equipment for surveillance and security, and must be able to respond quickly to any incidents or emergencies.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

11- Administrative buildings:

The factory requires office buildings for management and support staff. These buildings must be designed to suit the needs of employees, and must be equipped with all facilities necessary for work.

17 - Manpower and jobs:

1-17) Manpower:

A cement factory with an annual production capacity of 18 million tons requires an estimated workforce of about 1,000 people.

2-17) The main jobs in the cement factory according to specialization are as follows:-2

1- Cement production engineers: They design and operate production lines and monitor product quality. Number = 150

2- Cement production technicians: They operate and maintain production lines. Their number = 250

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

3-Cement production workers: They perform crushing, mixing, heat treatment and grinding work.

Their number = 300

4-Material handling workers: They transport raw materials and finished products. Their number = 150

5-Machinery and equipment maintenance and repair workers, number = 100

6- Cleaning and public services workers, number = 50

18- Transport, cars and machinery:

1-18) Types of transportation means: The cement factory needs different transportation mechanisms to transport raw materials and finished products inside and outside the factory, including the following:

1- Trucks: Trucks are used to transport raw materials and finished products over long distances, and the trucks used in cement factories are heavy and heavy

High carrying capacity

2- Tractors: Tractors are used to transport raw materials and finished products over short distances, and tractors used in the cement industry have wheels.

Or tractors with conveyors

3- Cranes: Cranes are used to load and unload raw materials and finished products from trucks or tractors. The cranes used in the cement industry are usually cranes with high lifting capacity

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4- Drilling mechanisms: used in cement factories to create foundations for production lines and warehouses. These mechanisms include the following:

1- Wheel excavators: used for digging in soft or sandy soil

2- Crawler excavators: Crawler excavators are used for digging in hard or rocky soil.

5- Trucks: Trucks will be used in the cement factory to transport raw materials and finished products within the factory. They have wheels or conveyors.

6- Vehicles: Vehicles for transporting employees, materials, and equipment. These cars include the following:

1- Passenger cars: Passenger cars are used to transport employees

2- Freight cars: used to transport materials and equipment

2-18) Number of mechanisms: The number of mechanisms that a cement factory needs depends on the size of the factory and the type of production. A cement factory with a production capacity of 18 million metric tons needs a large number of mechanisms to ensure continuity of production.

3-18) The cost of transportation vehicles: The cost of the vehicles according to the type of vehicle, its size, and its features, and its total cost = $193 million, where:

1- Trucks: 100 trucks, at a total cost of $53 million

2- Tractors: 50 tractors, at a total cost of $25 million

3- Cranes: 20 cranes, at a total cost of $23 million

4- Drilling machines: 15 excavators, at a total cost of $30 million

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

5- Trucks: 50 trucks, at a total cost of $22 million

6- Cars: 200 cars, at a total cost of $40 million

19- Residential city and medical units:

1-19) The cost of the residential city for the workforce:

The cost of the residential city for workers in a cement factory with an annual production capacity of 18 million tons is estimated at approximately 365 million Saudi riyals. This cost includes the cost of purchasing land, building housing units, and providing basic services

2-19) Land area: The required land area depends on a number of factors:

1- Number of residents: Each worker requires a residential area ranging between 30 and 40 square meters

2- Facilities: Public facilities such as mosques, schools, and hospitals require additional space

3-Infrastructure: Infrastructure such as roads and public facilities require additional space

4-Based on these factors, the area of land required for a workforce residential city with 1,000 workers is estimated at approximately 400 thousand m2

3-19) Building area and infrastructure:

1-The area of buildings and infrastructure required depends on the type of buildings and facilities to be constructed

2- Area of residential units: Each worker has a residential area ranging between 30 and 40 square meters. Therefore, the area of housing units required for a residential city with 1,000 workers is about 300 thousand square meters

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4-19)Public facilities, the required spaces are as follows:

1- Mosque: 500 square meters

2- School: 10,000 square meters

3-Hospital: 20,000 square meters

4-Thus, the area of public facilities required for a residential city that includes 1,000 workers is about 35,000 square meters

5-19) Infrastructure areas, the required areas are:

1- Roads: 100 thousand m2

2- Electricity: 50 thousand m2

3- Water: 25 thousand m2

4- Sanitation: 25 thousand m2

5- The infrastructure area of a residential city that includes 1,000 workers is about 200 thousand square meters.

6- The area of buildings and infrastructure required for a residential city for a workforce that includes 1,000 workers is about 555 thousand m2

Residential needs of the city

6-19)The residential city requires a set of basic needs for the workforce, including: 6-19

1- Housing: Housing units require providing a suitable space for each worker, in addition to basic facilities such as electricity, water, and sanitation

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2- Public services: The residential city requires the provision of a set of basic public services such as mosques, schools, and hospitals

3- Logistics services: The residential city requires the provision of a set of basic logistical services such as transportation and communications

7-19) The logistical services that the residential city needs include:

1- Means of transportation: The residential city requires the provision of suitable means of transportation for workers, such as buses or cars

2- Commercial facilities: The residential city requires the provision of basic commercial facilities such as supermarkets and grocery stores.

3- Recreation: The residential city requires providing recreational facilities for workers, such as parks and gardens.

8-19) Other factors: There are a group of other factors that must be taken into consideration when designing and building a residential city for the workforce, including:

1- Climate: The local climate must be taken into account when designing buildings and facilities

2- Culture: Local culture must be taken into account when designing buildings and facilities

3- Environment: The environment must be taken into account when designing buildings and facilities

9-19) Medical unit services: The workforce residential city needs one or more medical units that provide a set of basic medical services, such as:

1- Primary medical care

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2- First aid

3- Vaccinations

4- Preventive health care

5- The area of the medical unit is between 500 and 1000 square meters, depending on the size of the residential city and the number of residents

6- Medical unit specializations: Medical units provide primary medical care services, such as:

General medicine - family medicine - pediatrics - dentistry - orthopedics

7- The medical units in the residential city are equipped with the latest medical equipment and devices, and provide high-quality medical services

20- The time plan for establishing the factory and its needs:

1-20)The time plan for establishing a cement factory in Tanzania depends on a number of factors, including:

1- Factory size: The larger the factory, the longer it takes to establish it.

2- The technology used: The more complex the technology used, the longer it takes to create it

3- Location: The farther the site is from the basic infrastructure, the longer it takes to establish it.

2-20) The time plan for establishing a cement factory in Tanzania is estimated at approximately 3 years, distributed over the following stages:

First): The first stage: The planning and preparation stage (6 months). This stage includes the following:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

1- Study the economic feasibility of the project.

2- Obtaining the necessary government approvals.

3- Preparing the land.

4- Factory design.

5- Concluding contracts with suppliers and contractors.

Second): Construction and construction phase (24 months). This phase includes the following:

1- Building the factory

2- Installation of equipment and production lines

2-Testing equipment and production lines

Third: The trial operation phase (6 months). This phase includes the following:

1- Operating the factory on a limited scale.

2- Solve any problems that may arise.

Fourth): The commercial production stage (the rest): This stage begins after the end of the trial operation period, and continues as long as the factory continues to operate.

3-20)The time period for establishing a cement factory in Tanzania with a production capacity of 18 million metric tons is: 3 years

4-20) The success of the cement factory construction project depends on a number of factors, including:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

1- Good planning: Good project planning, including exploratory studies, engineering design, and obtaining government approvals

2- Effective management: Effective project management, including resource, risk, schedule, and budget management.

3- Adherence to the timetable and budget: The timetable and the specified budget must be adhered to, so as not to exceed the costs or delay the specified date.

4- Dealing with challenges: The challenges that may face the project must be dealt with effectively, such as the availability of raw materials, labor, and logistics services.

21- Training and trial operation:

Training and trial operation plan for a cement factory in Tanzania with a production capacity of 18 million metric tons. The training and trial operation plan is an essential part of the process of establishing a cement factory in Tanzania. This plan aims to prepare and train the workforce necessary to operate the factory, and to ensure that the factory operates efficiently and effectively

1-21) Objectives: The training and trial operation plan for a cement factory in Tanzania with a production capacity of 18 million metric tons aims to achieve the following objectives:

1- Preparing and training the workforce necessary to operate the factory

2- Ensuring the efficient and effective operation of the factory

3- Avoid any problems or malfunctions that may arise during operation

2-21) Tasks: The training and trial operation plan includes the following tasks:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

1-Selection and training of the workforce: The workforce needed to operate the factory is selected and trained on all necessary operations and procedures

To operate it efficiently and effectively

2- Preparing the factory for trial operation: The factory is equipped with all the necessary equipment and tools for trial operation, and all necessary tests are conducted to ensure that the factory is ready for operation.

3- Operating the pilot factory: The factory is operated on a limited scale, with the aim of testing all processes and procedures, and solving any problems or malfunctions that may arise.

3-21)Timetable: The duration of the training and trial operation plan is approximately 12 months, distributed over the following stages:

1-Selection and training (6 months): The workforce needed to operate the factory is selected and trained on all processes and procedures necessary to operate it efficiently and effectively.

2- Preparing the factory (3 months): The factory is equipped with all the necessary equipment and tools for trial operation, and all necessary tests are conducted to ensure that the factory is ready for operation.

3- Trial operation (3 months): The factory is operated on a limited scale, with the aim of testing all processes and procedures, and solving any problems or malfunctions that may arise.

4-21)Budget:

The expected cost of the training and commissioning plan is approximately US$5 million, distributed as follows:

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

1-Selection and training (US$ 2 million): This budget is used to select the workforce needed to operate the factory, and train them on all the processes and procedures necessary to operate it efficiently and effectively.

2- Preparing the factory ($ 2 million): This budget is used to equip the factory with all the equipment and tools necessary for trial operation, and to conduct all necessary tests to ensure that the factory is ready for operation.

3- Trial operation ($ 1 million): This budget is used to operate the factory on a limited scale, with the aim of testing all processes

procedures, and resolve any problems or malfunctions that may arise

5-21) Officials: The training and trial operation plan is supervised by a team of experts in the field of the cement industry. This team includes the following:

1-Project Manager: Responsible for supervising all tasks related to the training and trial runplans

2- Training Manager: Responsible for selecting the workforce needed to operate the factory, and training them on all processes and procedures necessary to operate it efficiently and effectively.

3-Trial Operation Manager: Responsible for operating the plant on a limited scale, testing all processes and procedures, and resolving any problems or malfunctions that may arise

6-21) Evaluation: The training and trial operation plan will be evaluated based on the following criteria:

1- Efficiency and effectiveness of the factory's operation: These standards are measured by monitoring the factory's performance during trial operation, and comparing the results with the expected standards.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2-Satisfaction with the workforce: This criterion is measured by conducting opinion polls of the workforce, and knowing the extent of their satisfaction with training and trial operation.

22- Marketing plan and market analysis:

The marketing plan is an essential part of the success of any cement factory. This plan determines how to reach customers, attract them, and achieve sales

1-22) Marketing plan: The marketing plan for a cement factory with an annual production capacity of 18 million tons depends on the following factors:

1-The size of the local market and the size of the regional market

2-The nature of competition in the local market and the regional market

3-Pricing strategy

4-Distribution strategy

2-22) The marketing plan for the cement factory in Tanzania is based on the following strategy:

1-General goal: achieving annual sales of 18 million tons of cement

2-Sub-objectives:

A-Build a strong brand for the factory

B- Reaching the largest possible number of potential customers

C - Providing high quality products and services at competitive prices

3-Environmental analysis

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4- Political Factors: Tanzania has a stable government and a business-friendly legislative environment

5- Economic Factors: Tanzania is enjoying steady economic growth, creating an increasing demand for cement

6- Social factors: Tanzania enjoys high population growth, which creates an increasing demand for housing and infrastructure, which enhances the demand for cement.

7- Technological factors: Tanzania enjoys rapid technological growth, which leads to increased demand for cement in the construction and manufacturing sectors.

8- Competitive analysis: There are two cement factories in Tanzania with a limited production capacity that does not exceed a total of 3 million metric tons per year.

It covers only 30% of the local market's need, and therefore there is a great opportunity for a new factory that provides high-quality products and services at competitive prices

(Marketing strategy: The factory's marketing strategy depends on the following points: 22-3

1- Focus on quality: The factory will focus on providing high quality products and services that meet customers' needs

2- Competitive price: The factory will offer competitive prices to attract customers

3- Strong brand: The factory will work to build a strong brand that reflects the quality of its products and services

4-22)Marketing objectives:

1- Increase factory brand awareness by 50% during first year of operation

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2- Increasing the factory's market share to 20% during the third year of operation

5-22)Marketing channels: The factory will use a variety of marketing channels to reach customers, including:

1- Direct marketing: The factory will communicate directly with potential customers through direct mail and telemarketing campaigns

2- Online marketing: The factory will use the Internet to disseminate information about its products and services, and attract potential customers

3- Public relations: The factory will work to build positive relationships with the media and government agencies

6-22) Marketing budget: The factory's marketing budget is 10 million US dollars in the first year of operation

7-22) Implementation plan: The factory's marketing plan will be implemented as follows:

1- First quarter: The focus will be on building the factory's brand and increasing awareness of it

2- Second quarter: Focus will be on developing a customer base for Factory

3- Third quarter: Focus will be on increasing sales

4- Fourth quarter: The focus will be on evaluating the performance of the marketing plan and making the necessary adjustments

8-22) Evaluation: The performance of the marketing plan is evaluated based on the following criteria:

1- Increasing brand awareness: This criterion is measured by conducting opinion surveys of potential customers

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2 -Increasing market share: This criterion is measured by comparing the factory's sales with the sales of its competitors

9-22) Recommendations:

Some recommendations that help improve the factory's marketing plan are:

1- Focus on the targeted sectors: The factory must focus on the targeted sectors that have the greatest demand for cement.

2- Innovation in products and services: The factory must strive to innovate new products and services that meet customer needs.

3- Rapid response to customer needs: The factory must strive to respond quickly to customer needs

By implementing these recommendations, the factory achieves its marketing goals and strengthens its position in the market

23- Advertising and advertising agencies:

1-23) Objectives: The advertising plan for a cement factory in Tanzania aims to achieve the following objectives:

1- Increase brand awareness of the factory.

2- Developing a customer base for the factory.

3-Increase sales

2-23) Target audience: The factory targets potential customers throughout Tanzania, including:

1-Contractors

2- Construction companies

3- Real estate developers-

4- Local governments

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

23-3) Marketing channels: The factory uses a variety of marketing channels to reach the target audience, including:

1- Television advertising to spread information about its products and services on a large scale

2- Print advertisements in newspapers, magazines and websites to attract target customers

3- Online marketing: to disseminate information about its products and services, and attract potential customers

4- Public Relations: The factory works to build positive relationships with the media and government agencies to enhance its reputation

4-23)Advertising content: Advertising content focuses on the following:

1-Factory Products Quality

2-Competitive factory prices

3-Excellent factory services

5-23)Budget: The factory's marketing budget is US$7 million in the first year of operation

6-23)Implementation plan: The factory's advertising plan is implemented as follows:

1- First quarter: The focus is on building the factory's brand and increasing awareness of it.

2- The second quarter: The focus is on developing a customer base for the factory.

3- Third quarter: The focus will be on increasing sales.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4-The fourth quarter: The focus is on evaluating the performance of the advertising plan and making the necessary adjustments.

7-23)Performance evaluation: The performance of the advertising plan is evaluated based on the following criteria:

1-Increasing brand awareness: Measure this criterion by conducting opinion surveys for potential customers.

2- Developing a customer base: Measure this criterion by comparing the number of the factory's current customers after implementing the plan with the number of customers before implementing the plan.

3-Increase sales: Measure this criterion by comparing the factory's sales after implementing the plan with the factory's sales before implementing the plan

8-23)Recommendations:

Recommendations that help improve the factory's advertising plan are:

1-Focus on targeted sectors: The factory must focus on the targeted sectors that have the greatest demand for cement.

2- Use analytical data: The factory must use analytical data to understand the target audience and determine the most effective marketing channels.

3- Measuring results: The factory must be careful to measure the results of the advertising plan to determine whether it achieves its goals.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

9-23) Giving exclusive agencies to sell cement: By choosing the appropriate exclusive agencies, the factory can ensure that its products and services are distributed effectively and that its marketing goals are achieved.

A-The factory can give exclusive agencies to sell cement in certain areas of Tanzania. This will help the manufacturer cover the market more effectively and achieve its marketing goals

B-When selecting exclusive agencies, the manufacturer must consider the following factors:

1-Experience: The agency must have experience in selling cement in Tanzania.

2- Distribution: The agency must have a wide distribution network covering the area allocated to it.

3- Relationships: The agency must have strong relationships with potential clients in the area assigned to it.

24- Environment and safety:

Environmental and safety study to establish a cement factory in Tanzania with a production capacity of 18 million metric tons

1-24) Introduction:

Tanzania is characterized by steady economic growth, creating an increasing demand for cement. However, establishing a new cement plant in Tanzania requires carefully studying the industrial safety environment

This study aims to identify the potential environmental and health risks associated with establishing a cement factory in Tanzania, and to develop a detailed plan to ensure the environmental and health safety of the factory.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2-24)Environmental studies: The environmental study for the proposed factory site includes the following:

1- Identify potential pollution sources for the factory, such as toxic gases, dust, and noise.

2- Assess the potential environmental impacts of the plant, such as its impact on air, water and soil.

Develop the necessary plans to reduce the environmental impacts of the factory-3

3-24) Potential environmental and health risks: Potential environmental and health risks associated with establishing a cement factory in Tanzania include the following:

1- Air pollution: Burning coal used in cement production releases large amounts of pollutants into the air, such as sulfur oxide, nitrogen dioxide, and polycyclic aromatic hydrocarbons.

2- Water pollution: Improper disposal of industrial waste leads to pollution of ground and surface water.

3- Noise: Industrial processes in the cement factory cause high levels of noise.

4- Health risks: Exposure to chemicals used in cement production can cause health risks to workers and residents surrounding the factory.

4-24) Detailed plan to ensure environmental and health safety:

The detailed plan to ensure environmental and health safety for establishing a cement factory in Tanzania is based on the following points:

1- Choose the appropriate location: The factory location was chosen far from residential areas and environmentally sensitive areas according to our land

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2- Using modern technology: We use modern technology to reduce pollutant emissions and prevent water pollution.

3- Proper disposal of waste: Industrial waste is disposed of in an environmentally safe manner.

4- Implementation of health safety standards: International health safety standards will be applied to ensure the protection of workers and residents surrounding the factory.

5-24) Recommendations:

Some recommendations that help improve the environmental and health safety of establishing a cement factory in Tanzania are:

1- Cooperation with government agencies: You must cooperate with the competent government agencies to ensure compliance with environmental and health laws and regulations.

2- Community awareness: The local community must be made aware of the potential environmental and health risks associated with establishing a cement factory, and the importance of cooperation with the factory to ensure environmental and health safety.

By implementing this detailed plan, the environmental and health safety of establishing a cement plant in Tanzania can be ensured, protecting the environment and public health.

6-24) Implementing the detailed plan:

The detailed plan to ensure environmental and health safety for establishing a cement factory in Tanzania is implemented as follows:

1- First quarter: The appropriate location for the factory was chosen based on the necessary environmental and health considerations.

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2-The second quarter: From our experience, the focus is on designing the factory and choosing the appropriate equipment and technologies.

3-Third quarter: The focus will be on building the factory and installing equipment and technologies suitable for the environment and occupational and public safety

4-The fourth quarter: The focus will be on testing the factory and starting production, with recommendations to preserve the environment and achieve safety standards

7-24) evaluate the performance of the detailed plan based on the following criteria:

1- Level of pollutant emissions: This standard will be measured by conducting periodic environmental studies.

2- Water pollution level: This standard will be measured by conducting periodic environmental studies.

3-Noise levels: This standard will be measured through the use of noise measuring devices.

4-Occupational injury cases: This standard will be measured by maintaining and following up on occupational injury records

1-25) Recommendations:

Based on the results of the feasibility study, establishing a cement factory with an annual production capacity of 18 million tons is a profitable investment project and the success of this project depends on several factors, including:

Choosing a suitable location for the factory: close to sources of raw materials, energy sources, and consumer markets. Location 1 was chosen

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

2- Using the latest technologies and equipment in building the factory: This is to ensure product quality and production efficiency, and this is clear from our experience and what was stated in the study.

3-Applying international quality standards: in order to ensure customer satisfaction, and this is our standard of excellence

4- Good project management: to ensure the achievement of the project objectives, and our company is a leader in the field of managing strategic industries such as cement, with our accumulated balance of experience.

2-25)The following factors must be taken into account, which are beneficial for the success of establishing the project:

A- Political and economic factors: Political and economic factors must be taken into account in Tanzania, where the factory is established. The most important of these factors are:

1- Political stability in the region.

2-The rate of economic growth in the region.

3-Government policies supporting the industry

B-Social and cultural factors: Social and cultural factors must be taken into account in the area where the project is located, and the factors include the following:

1-Customs and traditions of the local population

2-Local laws and regulations.

3-The needs of the local population.

4- Providing job opportunities for local residents

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

5- Contributing to the development of local communities

C - To establish a successful cement factory project in Tanzania:

1- Cooperation with the Tanzanian government: Cooperation with the Tanzanian government helps facilitate procedures for obtaining government approvals and permits.

Necessary for the project, and this is available to us

2- Using local resources: Using local resources helps reduce costs and promote economic .development in the region

Participation in the local community: Participation in the local community helps build -3 .relationships with local residents and ensure their support for the project

3-25) Conclusion:

1- The cement plant, which produces 18 million metric tons per year, will be able to meet local demand and export cement to neighboring countries

2- Based on the results of this study, establishing a cement factory in Tanzania with an annual production capacity of 18 million metric tons is an economically and technically viable project

3- The project enjoys attractive investment returns, as it is expected to achieve a return on investment (of 29%) from an economic standpoint

Förvaltarvägen
169 68 solna
Stockholm
+46736766626
barikanssontrade@gmail.com

4-Technically, the project is feasible, as Tanzania has the natural resources needed to produce cement, and there is a large market for cement products in Tanzania

5-In general, establishing a cement factory in Tanzania with an annual production capacity of 18 million metric tons is a promising project that can contribute to the economic and social development in Tanzania

6-By implementing the recommendations, the project achieves its economic and social goals and is an exceptionally promising project

God bless

Barikan Consulting

December 22, 2023