

Preliminary Feasibility Study on Plastic Sports Footwear Activity



Prepared by
Economic Performance Sector
Central Department of Feasibility Studies
General Department of Economic Feasibility Studies

July 2022

I. Project Basic Information:

Project Name	Factory for the production of plastic sports footwear
Project Location	Gharbia Governorate – The project can be set up in any industrial zones in which the industrial sector is available.
Project Surface Area	From 1150 m ² to 4000 m ²
Means of Disposition	Ownership
Annual Lease/meter	EGP 800/m ² (indicative price)
Life Expectancy	Five years
Targeted Products:	Production of plastic sports shoes and slippers of various shapes and types.
Expected Labor	60 workers, technicians, and administrative officers
Investment Costs Expected	Approximately EGP 31,500,000 (about USD 1.7 million with the exchange rate of EGP 18.5/USD)
Feasibility Study Date	July 2022

Introduction to the Activity of the Study:

- The activity of the project under study aims to produce plastic sports shoes and slippers of various shapes and types in order to bridge the gap of demand for plastic shoes and slippers in the local market, which is covered by importing from (China – Indonesia – Turkey – Vietnam).
- Sports footwear production is one of the activities that are globally and locally required, does not require complex technology, and is easy to be obtained from multiple sources.
- The idea of the project is based on injection molding: it is a manufacturing process to produce parts from plastic polymers of both types (thermoplastics and thermosets), the polymers are injected in their molten state under high pressure in a mold that has a shape of the desired piece to be produced.
- Injection molding contributes to the manufacture of a wide range of products of all kinds and different sizes, which helps the project in diversifying its products to meet the different tastes of consumers.

II. Project Legal Feasibility Study

- The project may be set up as a sole proprietorship, partnership, limited liability company, or joint stock company.
- Such industry does not require any limitations. The operation license by notification is obtained as per Law no. 15/2017, taking into consideration the need to obtain required licenses from the governorate or the entity having jurisdiction over the land and its affiliated local units or the City Hall; and the Civil Defense and Fire requirements that require specific procedures due to the nature of the industry.
- In case of export, the project must obtain an import and export card indicating the nature and description of the products, or export through an intermediary company that undertakes the export and customs release procedures on behalf of the project.
- The costs of incorporation, attorney fees, licensing, registration with the Industrial Development Authority (IDA) and the entities having jurisdiction are nearly EGP 100,000.

III. Project Environmental Feasibility Study

- The project is classified as the "B" list projects, since it is plastic injection molding activity as per item (30) of environmental screening projects list. Assessment of the environmental impact of the project must be according to the Environmental Screening Form "B", and the requirements of the Environmental Law. The project must take into account the environmental requirements for such activity due to the nature of the industry.
- Environmental requirements, which need special measures to reduce pollution, emissions in this industry and waste disposal, must be met.
- Waste disposal costs were included in the costs of raw materials in the study according to the data received from the IDA.

IV. Project Social Feasibility Study

- The social feasibility study aims to analyze the social benefits and costs of various projects in order to select the projects that achieve the optimum social benefit. It is noted in this regard that the social feasibility study is concerned with additional aspects that were not examined in any of the other feasibility studies, because it focuses on the social effects of the project due to the project's contribution to the achievement of the economic and social goals of the society.
- The project is socially feasible. It creates new job opportunities; gives access to favorable employment outcomes; and provides sixty (60) direct job opportunities, other than the indirect job opportunities.
- The project contributes to the national program to substitute imports for the benefit of society by relying on local manufacturing, providing foreign currency, and localizing the industry.

V. Project Marketing Feasibility Study

1- Outcomes of the project's marketing feasibility study according to growth drivers and competitive strength:

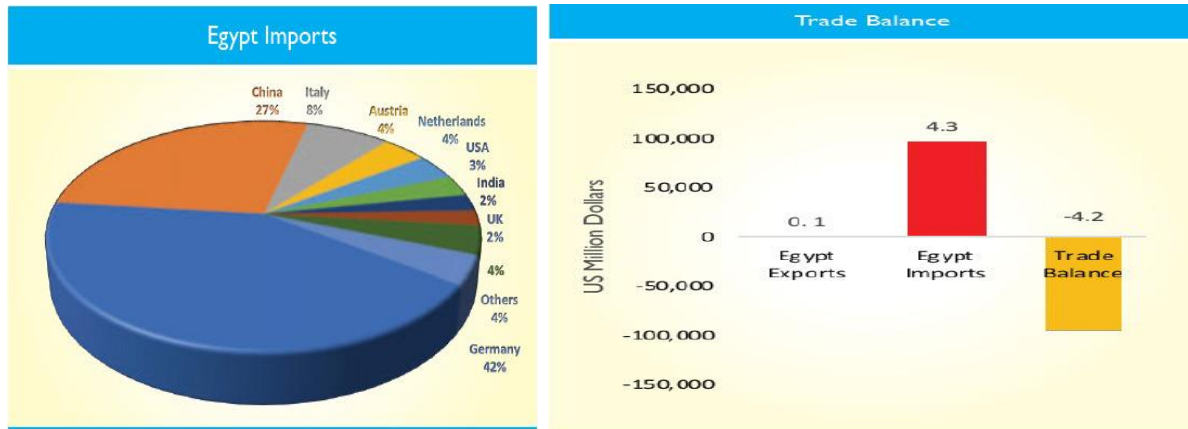
- The project aims to bridge the gap of demand for plastic shoes and slippers in the local market, which is covered by importing from (China – Indonesia – Turkey – Vietnam).
- One of the growth drivers and competitive strength of the activity under study is Egypt's strategic location, which facilitates export to Asia, Africa, Europe and North America, as well as international agreements with the European Union (EU), COMESA and Mercosur countries. Egypt has 15 commercial ports to facilitate exports, and the volume of the large consumer market in Egypt makes it an attractive market for such products.

2- Supply Volume:

- Real GDP in fiscal year 2018 reached 5.3% compared to 4.2% in 2017, and a gradual increase is expected to reach 5.8% in fiscal year 2020.
- The average annual sales of footwear is about \$600 million.
- The average sales are about 40 million pairs of shoes, of which 60% are for women, 19% are for children, and 21% are for men.

3- Demand Volume:

- According to the data received from the Industrial Modernization Center (IMC), there is a clear dependence on imports.
- There is a deficit in the trade balance with regard to this activity. The top ten most exporting countries are as follows:



4- Market Gap:

- According to the abovementioned, there is a gap in the demand for plastic and rubber footwear in the local market of more than \$66 million in 2018, by an increase of 29% of 2017 imports. Egypt imports 92% of plastic and rubber footwear from China.

5- Local Market:

- The main objective of the project is to cover the local demand and fill the gap in the trade balance on the products, which experience severe shortcomings that are not sufficient to cover local needs.
- This project meets the needs of the local market, and would save the amounts paid in order to import large quantities of such products if they are locally manufactured.

6- Potential Export Markets:

- One of the opportunities available to the project is to fill the gap of the local market and export. The project could offer its products at competitive prices to the global market, which is witnessing a significant increase in the demand for these products.
- It is possible to expand to invade some other markets, provided that the production be with special specifications that meet the needs of the countries to which the products will be exported. The most important markets proposed for export are:
 - ☐ Europe (Germany – France – Italy – the UK)
 - ☐ The Middle East (Yemen – Iraq – Jordan – Tunisia – Lebanon)
 - ☐ North America: the USA
 - ☐ Africa (Kenya –Uganda – Sudan)



7- Products, expected sales volume and prices during the fiscal year:

- Sneakers
- Slippers for children
- Sandals for women/men
- Slippers for women/men
- Crocs for boys/girls
- Water shoes and sports shoes



According to the industry, the attached prices are indicative and in light of the natural rates. They could be modified according to the date of the study, and be summarized during the annual production cycle according to the following table, and the data received from IDA and IMC:

Product	Measuring unit	Expected sales volume	Average pair sale price	Total expected annual sales
Pair of plastic shoes or slippers of various types	Pair of shoes	1 million pairs	EGP 30/pair of shoes	EGP 30,000,000

8- Expected Marketing Campaign Costs:

The annual costs of the marketing campaign, products distribution, printing of brochures and publication in specialized magazines, online advertising, especially at the beginning of the project to achieve the spread are estimated at EGP 500,000 (five hundred thousand Egyptian Pounds only).

VI. Project Technical and Engineering Feasibility Study

1- Production Process:



- ✓ Material mixing - injection molding - removal – finishing

2- Machinery and Equipment Needed for Production Process:

Item
▪ P.V.C injection molding machine ▪ EVA injection molding machine ▪ Dye machines ▪ Sole washing machine ▪ Sewing machines

The investment cost of machinery and equipment required for the project as per the data of IDA is estimated at EGP 5 million.



3- Location:

The project is implemented in Gharbia governorate in the Arab Republic of Egypt, due to the availability of utilities and licenses necessary for this type of industry; the governorate's proximity to sources of raw materials; as well as the availability of labor at reasonable prices; and the availability of land at reasonable prices. The project could be implemented in any suitable place where such comparative advantages are available.

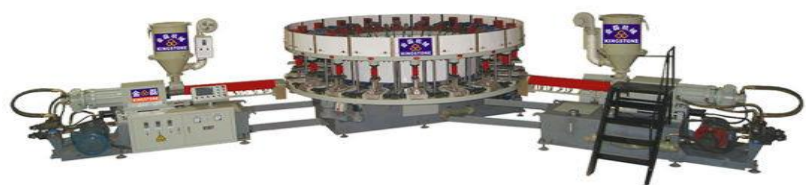
The location on the map:



The land surface area needed for the project is 3000 m².

According to the investment opportunities of Gharbia governorate, which are contained in some feasibility studies published on Investment Map website, and according to the data received from IDA and IMC, the average sale per meter square of vacant land without buildings is EGP 800 (indicative price). The conditions for undertaking the factory activity are met, all the utilities required for the project are available, and obtaining licenses is facilitated. Such prices are reviewed periodically by the relevant pricing committees.

Accordingly, the estimated cost of the land = $1150\text{m}^2 \times \text{EGP } 800$ = approximately EGP 920,000 (nine hundred and twenty thousand Egyptian Pounds only), and it was included in the capital costs of the project according to what would be mentioned in the financial study.



4- **Buildings:**

According to the data received from IDA, the factory would need 60%-allocation of the total land area as an area for the manufacture and production operations. Accordingly, the construction ratio is estimated at an area of 1800m², calculating the cost per meter square for buildings, trusses including the walls, security rooms, electricity and tanks, some of which are built of bricks and concrete completely finished. Considering the average price of EGP 4300/m², the total estimated cost of buildings and constructions = 1800 m² × EGP 4300 /m² = EGP 7,740,000 (seven million and seven hundred and forty thousand Egyptian Pounds only).



5- **Raw Materials, Packing and Packaging Materials:**

- ✓ Raw Materials: EVA and P.V.C. plastic materials / dyes, insoles, and accessories
- ✓ Packing and packaging materials: plastic packages – cartoon packages

The annual running cost needed to obtain the raw materials, packing and packaging materials to produce the production volume mentioned in the marketing study; 1 million pairs, according to the data of IDA, is approximately EGP 14 million.

6- **Utilities Consumption:**

- Electricity consumption= 63 MWh.
- Water consumption= 700 m³.

The annual running cost of energy and utilities as per the consumption rates needed to produce the production volume mentioned in the marketing study; 1 million pairs, according to the data of IDA, is approximately EGP 600 thousand.

VII. Project Financial Feasibility Study

1. Foundations and Hypothesis of the Financial Feasibility Study:

- In this financial feasibility study, data and revenue estimates are based on the volume and sales value as per market study results.
- Investment cost values and other costs and expenses have been estimated based on the technical study results received from IDA and IMC.

- Buildings and machinery annual depreciation is estimated based on the technical study results. Same buildings and machinery sale value is presumed to be matching their book value at the end of the expected lifetime of the project.
- It is assumed that the first operating cycle requirements are obtained with 10% facility from the suppliers.
- It is taken into account that the estimated value of the fixed assets mentioned in this study is time-and-circumstance limited. Accordingly, such value may change by change of circumstances or by report time prescription or change of economic climate in general.
- Pursuant to the Egyptian Accounting Standards, it is presumed that incorporation and pre-commencement costs are fully expired by the first year of revenue.
- The project life expectancy is five (5) years to test the indicators of economic feasibility of the project.
- The estimated income statements have been prepared on the presumption that there is no fundamental change in the revenue values and expected annual costs during the study period, unlike the estimated growth rate in sales, which corresponds to a similar growth rate in costs of 10% annually.
- A tax rate (TR) of 22.5% for the annual profits of companies, 20% for the returns of treasury bonds issued by the Egyptian Ministry of Finance, was relied on, in accordance with the Egyptian legislation prevailing at the time of preparing the study.
- Annual cash flows are estimated using the indirect estimation method; necessary adjustments have been applied to the results of the estimated income statements of the years in this study.
- The criteria of Return on Investment (ROI), the Pay-back Period (PBP), the Net Present Value (NPV), and the Internal Rate of Return (IRR) were relied upon in evaluating the economic feasibility of the project, taking into account the Required Rate of Return on investment (RRR).
- RRR is determined as per the weighted average cost of capital (WACC), and presuming the project is fully financed by the owners.
- Future financial estimates contain estimated and other unforeseen risks, and other factors that may lead to different performance and actual results that the project would achieve from the expected performance according to the assumptions on which the estimated statements were prepared according to the prevailing business climate at the time of preparing the study.
- General and administration expenses and labor costs have been taken into account within the estimated income statements, assuming that most of the employment is direct labor in light of its ratio in the total employment.

2. Definition of Required Rate of Return (RRR)

- It is the minimum return required by the investor, in order to invest his/her money in a project inside Egypt, evaluated by the industrial risks of the economic activity of the project under study.

- The study is concluded by an RRR of 18% as per the industry risks in Egypt, and is calculated as follows:

$$RRR = [RFR + (CRP \times \beta)]$$

- The risk-free rate (RFR) is calculated according to the official data published by the Central Bank of Egypt for treasury bonds due at the end of 2026, which is close to the evaluation period of the project within 5 years, using the weighted average yield of different bond issues for that period.

<https://www.cbe.org.eg/en/Auctions/Pages/AuctionsEGPTBondsCouponHistorical.aspx>

Weighted Avg. Yield (%)	Max. Yield (%)	Min. Yield (%)	Coupon	Accepted Amount	Submitted Amount	Required Amount	Type (New/Reopening)
١٤,٠٦٠	١٤,١٢٠	١٣,٩٠٠	١٤,٠٦٠	٨,٠٠٠,٠٠٠,٠٠٠	١٤,٣٢١,٥٥٠,٠٠٠	٨,٠٠٠,٠٠٠,٠٠٠	N
١٤,٣٤٧	١٤,٤٠٠	١٤,١٠٠	١٤,٠٦٠	٨,٠٤٩,٨٨٦,٠٠٠	١٢,٠٤٩,٨٨٦,٠٠٠	٧,٥٠٠,٠٠٠,٠٠٠	R
١٤,٣٥٩	١٤,٣٩٥	١٤,٢٤٠	١٤,٠٦٠	١٧,٢١٦,٠٥٠,٠٠٠	٢٥,٠٩٦,٢٥٠,٠٠٠	٨,٠٠٠,٠٠٠,٠٠٠	R
١٤,٤٠٣	١٤,٤٤٠	١٤,٢٥٠	١٤,٠٦٠	١٢,٢٣٢,٧٤٨,٠٠٠	١٦,٢٧٢,٨٨٧,٠٠٠	٧,٥٠٠,٠٠٠,٠٠٠	R
١٤,٢٩	متوسط العائد قبل خصم الضرائب						
١١,٤٣	متوسط العائد بعد خصم ضريبة ٢٠%						

Average return before tax	متوسط العائد قبل خصم الضرائب
Average return after 20% tax discount	متوسط العائد بعد خصم ضريبة ٢٠%

- A CRP of 5.33% was used according to Egypt's global rating issued by S&P "Standard & Poor's" – Moody's as per the latest update of the global professor Damodaran's website about the Egyptian market data for the year 2021.

<http://www.stern.nyu.edu/~adamodar/pc/datasets/ctryprem.xlsx>

- Third, the beta factor of 1.20 for the risks of the Egyptian market for the industry of the study is assumed as per the average industry risk.

<http://www.stern.nyu.edu/~adamodar/pc/datasets/betas.xls>

Thus, the RRR is determined as follows:

$$RRR = (11.43 + 5.33 \times 1.20) = \text{approximately } 18\%$$

3. Project Investment Cost

- According to Article (11) of the Executive Regulations of Investment Law No. 72 of 2017, enacted by Prime Minister Decree No. 2310 of 2017, the project investment cost is defined as follows:

"Project investment cost shall mean such costs required to set up an Investment Project represented in property rights, in addition to long-term liabilities invested in setting up or establishing fixed corporeal (tangible) assets or incorporeal (intangible) assets, conditional on payment of value thereof in cash, and working capital."

The opening budget for the investment project can be prepared according to the results of the estimated technical feasibility study as follows:

Item	EGP
<u>Long-term Assets</u>	
– Incorporation, licenses, and pre-commencement expenses	100,000
– Lands	920,000
– Buildings	7,740,000
– Machinery and equipment	5,000,000
Total long – term assets	13,760,000
<u>Current Assets</u>	
– Reservoir of raw materials, production supplies, packing and packaging materials	14,000,000
– Cash and likewise (1)	5,160,000
Total current assets	19,160,000
<u>Current Liabilities</u>	
– Raw materials, production supplies, packing and packaging materials suppliers	1,400,000
Total current liabilities	1,400,000
Working capital	17,760,000
Total investment	31,520,000
<u>To be financed as follows:</u>	
<u>Property Rights</u>	
Capital	31,520,000
Total investment financing	31,520,000

- (1) To satisfy the expenses of the first operating cycle, including (labor wages 3 million - marketing expenses 500 thousand - electricity and utilities consumption of about 660 thousand - general and administration expenses that include food, allowances, stationery, professional fees, etc. of 1 million).

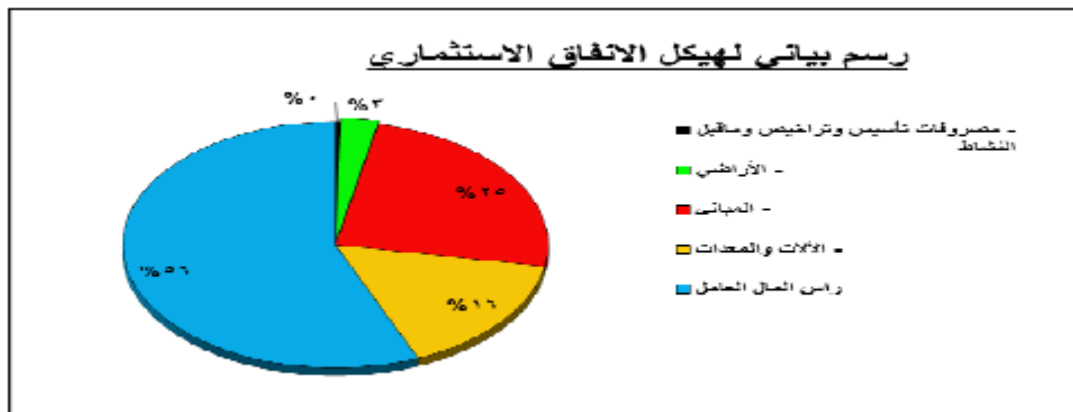


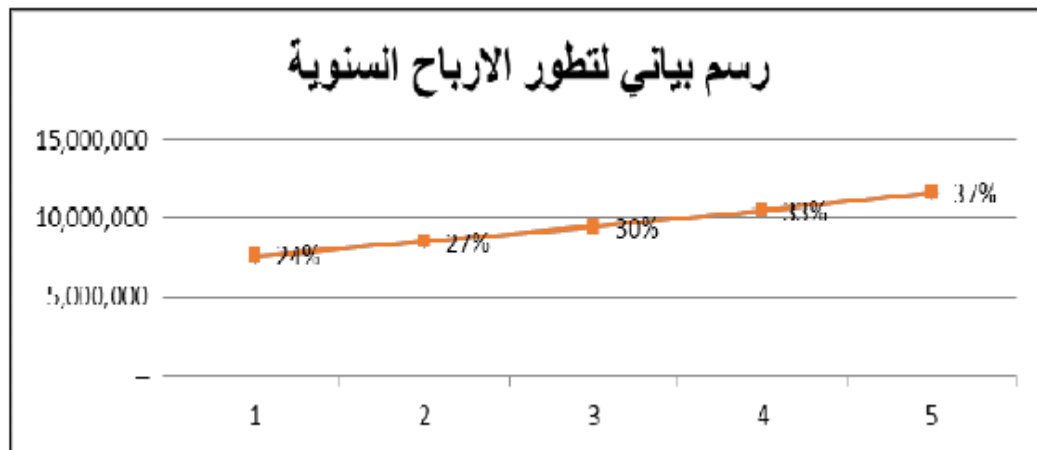
Diagram of Investment Spending Structure	رسم بياني لهيكل الإنفاق الاستثماري
Incorporation, licenses, and pre-commencement expenses	مصرفات تأسيس وتراخيص وما قبل النشاط
Lands	الأراضي
Buildings	المباني
Machinery and equipment	الألات والمعدات
Working capital	رأس المال العامل

Thus, the total investment cost of the project is
Total long-term assets + working capital= approximately EGP 31,500,000
(Approximately thirty-one million and five hundred thousand Egyptian Pounds only)
Equivalent to an estimated average exchange rate of EGP 18.5 / USD
(approximately about USD 1.7 million)

4. Expected Income Statements for the Years of Investment Project:
Could be prepared as per the outcomes of the Technical Feasibility Study as follows:

السنة الأولى	السنة الثانية	السنة الثالثة	السنة الرابعة	السنة الخامسة	البيان
٣٠,٠٠٠,٠٠٠	٣٣,٠٠٠,٠٠٠	٣٦,٣٠٠,٠٠٠	٣٩,٩٣٠,٠٠٠	٤٣,٩٢٣,٠٠٠	إجمالي الإيرادات
(١٧,٦٦٠,٠٠٠)	(١٩,٤٢٦,٠٠٠)	(٢١,٣٦٨,٦٠٠)	(٢٣,٥٠٥,٤٦٠)	(٢٥,٨٥٦,٠٠٠)	يخصم:
١٢,٣٤٠,٠٠٠	١٣,٥٧٤,٠٠٠	١٤,٩٣١,٤٠٠	١٦,٤٢٤,٥٤٠	١٨,٠٦٦,٩٩٤	تكلفة المبيعات
					مجموع الربح
(١٠٠,٠٠٠)	(٨٨٧,٠٠٠)	(٨٨٧,٠٠٠)	(٨٨٧,٠٠٠)	(٨٨٧,٠٠٠)	يخصم:
					مصرفات التأسيس وما قبل النشاط
(١,٥٠٠,٠٠٠)	(١,٦٥٠,٠٠٠)	(١,٨١٥,٠٠٠)	(١,٩٩٦,٥٠٠)	(٢,١٩٦,١٥٠)	اهلاك الأصول الثابتة
٩,٨٥٣,٠٠٠	١١,٠٣٧,٠٠٠	١٢,٢٢٩,٤٠٠	١٣,٥٤١,٠٤٠	١٤,٩٨٣,٨٤٤	مصرفات عمومية وإدارية وتسويقية
					صافي الربح المحاسبي قبل الضرائب
(٢,٢١٦,٩٢٥)	(٢,٤٨٣,٣٢٥)	(٢,٧٥١,٦١٥)	(٣,٠٤٦,٧٣٤)	(٣,٣٧١,٣٦٥)	يخصم:
٧,٦٣٦,٠٧٥	٨,٥٥٣,٦٧٥	٩,٤٧٧,٧٨٥	١٠,٤٩٤,٣٠٦	١١,٦١٢,٤٧٩	الضريبة (بمعدل ٢٢,٥%)
%٢٤	%٢٧	%٣٠	%٣٣	%٣٧	صافي الربح المحاسبي بعد الضرائب
					معدل العائد على رأس المال (ROI)

Item	البيان
First Year	السنة الأولى
Second Year	السنة الثانية
Third Year	السنة الثالثة
Fourth Year	السنة الرابعة
Fifth Year	السنة الخامسة
Total revenue	إجمالي الإيرادات
Subtract	يخصم
Cost of Sales	تكلفة المبيعات
Gross Profit	مجمّل الربح
Incorporation and pre-commencement expenditure	مصرفات التأسيس وما قبل النشاط
Depreciation of fixed assets	إهلاك الأصول الثابتة
General, administration, and marketing expenses	مصرفات عمومية وإدارية وتسويقية
Net accounting profit before tax	صافي الربح المحاسبي قبل الضرائب
Tax (at a rate of 22.5%)	الضريبة (بمعدل ٢٢,٥%)
Net accounting profit after tax	صافي الربح المحاسبي بعد الضرائب
Rate of Return on Investment (ROI)	معدل العائد على رأس المال ROI



Development of Annual Profits

رسم بياني لتطور الأرباح السنوية

5. Estimating the cash flow stream for the years of the investment project:

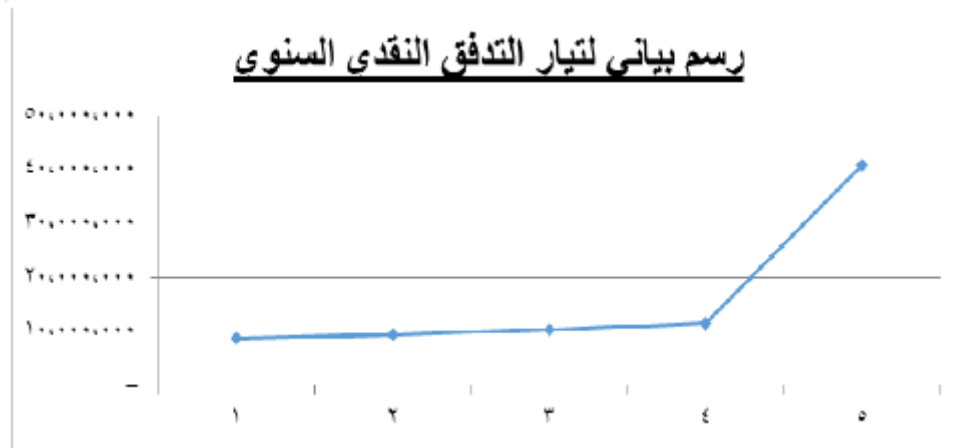
According to the foregoing, the cash outflow in year (zero) = approximately EGP 31,500,000.

The cash flow stream of the economic life of the project can be estimated indirectly through adjusting the net accounting profit by re-adding the depreciation premium because it is a non-cash expense, and by re-adding the incorporation and pre-commencement expenditure because they are calculated within the value of the outgoing investment costs in the year zero.

السنة الأولى	السنة الثانية	السنة الثالثة	السنة الرابعة	السنة الخامسة	البيان
٣٠,٠٠٠,٠٠٠	٣٣,٠٠٠,٠٠٠	٣٦,٣٠٠,٠٠٠	٣٩,٩٣٠,٠٠٠	٤٣,٩٢٣,٠٠٠	إجمالي الإيرادات
(١٧,٦٦,٠٠٠)	(١٩,٤٢٦,٠٠٠)	(٢١,٣٦٨,٦٠٠)	(٢٣,٥٠٥,٤٦٠)	(٢٥,٨٥٦,٠٠٠)	يخصم: تكلفة المبيعات
١٢,٣٣٤,٠٠٠	١٣,٥٧٤,٠٠٠	١٤,٩٣١,٤٠٠	١٦,٤٢٤,٥٤٠	١٨,٠٦٦,٩٩٤	مجمول الربح
(١٠٠,٠٠٠)	(٨٨٧,٠٠٠)	(٨٨٧,٠٠٠)	(٨٨٧,٠٠٠)	(٨٨٧,٠٠٠)	يخصم: مصرفات التأسيس وما قبل النشاط
(١,٥٠٠,٠٠٠)	(١,٦٥٠,٠٠٠)	(١,٨١٥,٠٠٠)	(١,٩٩٦,٥٠٠)	(٢,١٩٦,١٥٠)	اهلاك الأصول الثابتة
٩,٨٥٣,٠٠٠	١١,٠٣٧,٠٠٠	١٢,٢٢٩,٤٠٠	١٣,٥٤١,٠٤٠	١٤,٩٨٣,٨٤٤	مصرفات عمومية وإدارية
					صافي الربح المحاسبي قبل الضرائب
(٢,٢١٦,٩٢٥)	(٢,٤٨٣,٣٢٥)	(٢,٧٥١,٦١٥)	(٣,٠٤٦,٧٣٤)	(٣,٣٧١,٣٦٥)	يخصم: الضريبة (بمعدل ٢٢,٥%)
٧,٦٣٦,٠٧٥	٨,٥٥٣,٦٧٥	٩,٤٧٧,٧٨٥	١٠,٤٩٤,٣٠٦	١١,٦١٢,٤٧٩	صافي الربح المحاسبي بعد الضرائب
٩,٨٧,٠٠٠	٨,٨٧,٠٠٠	٨,٨٧,٠٠٠	٨,٨٧,٠٠٠	٨,٨٧,٠٠٠	يضاف مصرفات غير نقدية/ تشغيلية
٨,٦٢٣,٠٧٥	٩,٤٤٠,٦٧٥	١٠,٣٦٤,٧٨٥	١١,٣٨١,٣٠٦	١٢,٤٩٩,٤٧٩	اهلاك ومصرفات التأسيس وما قبل النشاط
					صافي تدفق نقدي تشغيلي
					يضاف إيرادات أخرى للسنة الأخيرة
٨,٦٢٣,٠٧٥	٩,٤٤٠,٦٧٥	١٠,٣٦٤,٧٨٥	١١,٣٨١,٣٠٦	١٢,٤٩٩,٤٧٩	صافي رأس المال العامل المستمر
					القيمة التخريدية للأصول الثابتة
					صافي التدفق النقدي السنوي

Item	البيان
First Year	السنة الأولى
Second Year	السنة الثانية
Third Year	السنة الثالثة
Fourth Year	السنة الرابعة
Fifth Year	السنة الخامسة
Total revenue	إجمالي الإيرادات
Subtract	يخصم
Cost of Sales	تكلفة المبيعات
Gross Profit	مجمول الربح
Incorporation and pre-commencement expenditure	مصرفات التأسيس وما قبل النشاط
Depreciation of fixed assets	إهلاك الأصول الثابتة
General and administration expenses	مصرفات عمومية وإدارية
Net accounting profit before tax	صافي الربح المحاسبي قبل الضرائب
Tax (at a rate of 22.5%)	الضريبة (بمعدل ٢٢,٥%)
Net accounting profit after tax	صافي الربح المحاسبي بعد الضرائب
Adding non-cash and operating expenses	يضاف مصرفات غير نقدية/ تشغيلية

Depreciation and incorporation and pre-commencement expenditure	اهلاك ومصروفات التأسيس وما قبل النشاط
Net operating cash flow	صافي تدفق نقدي تشغيلي
Adding other revenues for the last year	يضاف إيرادات أخرى للسنة الأخيرة
Net working capital	صافي رأس المال العامل المسترد
Salvage Value of Fixed Assets	القيمة التخريدية للأصول الثابتة
Net annual cash flow	صافي التدفق النقدي السنوي



Annual Cash Flow Stream رسم بياني لتيار التدفق النقدي السنوي

Thus, the annual cash flow stream could be summarized as follows:

Years	0	1	2	3	4	5
Net Annual Cash Flow	(33,000,000)	8,623,075	9,440,675	10,364,785	11,381,306	39,484,479

6. Indicators of Project Financial Feasibility Study:

I: Return on Investment (ROI)

II: Pay-Back Period (PBP)

III: Net Present Value (NPV)

I: Return on Investment (ROI):

According to what was previously explained and by reviewing the estimated income statements for the project, the average ROI can be calculated as follows:

$$\text{Ratio of average net accounting profit to investment cost} = \frac{\text{average net annual profit}}{\text{total investment costs}} \%$$

السنة	صافي الربح المحاسبي بعد الضرائب	رأس المال المدفوع	معدل العائد على رأس المال المتوقع
١	٧.٦٣٦.٠٧٥	٣١.٥٢٠.٠٠٠	%٢٤
٢	٨.٥٥٣.٦٧٥		%٢٧
٣	٩.٤٧٧.٧٨٥		%٣٠
٤	١٠.٤٩٤.٣٠٦		%٣٣
٥	١١.٦١٢.٤٧٩		%٣٧
متوسط معدل العائد البسيط على الاستثمار (ROI) %٣٠,٣١			

السنة	Year
صافي الربح المحاسبي بعد الضرائب	Net Accounting Profit After Tax
رأس المال المدفوع	Paid-in Capital
معدل العائد على رأس المال المتوقع	Expected ROI on Investment
متوسط معدل العائد البسيط على الاستثمار	Average ROI

Project ROI Results:

In respect of the paid-in capital, the project has recorded an average percentage of net accounting profit of 30%, which exceeds the investors' required rate of return (RRR), which was previously determined at 18%, and this stresses that the project is financially feasible.

It is worth noting that this indicator is an aid tool to evaluate the project. However, it cannot be relied upon alone in determining the economic feasibility of the project, as this indicator is faulted for the following:

1. Its dependence on the net accounting profit, which may be based on depreciation and provisions estimates that may lead to a value that is different from the actual value achieved by the project; and
2. Not expressing the actual cash flows, which may give misleading results.

III: Pay-Back Period (PBP):

The payback period is the amount of time a project takes to recover its investment costs through the net cash flows expected to be achieved during the operating years. It expresses the period elapsed from the life of the project until it achieves net cash flows from operating its assets equal to a value equal to the paid-in capital at the beginning of the project's operation.

In accordance with the above mentioned, and by reviewing the estimated annual cash flow statements for the project, PBP can be calculated as follows:

Years	Zero	1	2	3	4	5
Net Annual Cash Flows	(31,520,000)	8,623,075	9,440,675	10,364,785	<u>11,381,306</u>	39,484,479
Net Cumulative Annual Cash Flows	(31,520,000)	(22,896,925)	(13,456,250)	<u>(3,091,465)</u>	8,289,841	47,774,320
PBP by Years	3.27					

$$\text{Payback} = \text{last year of net negative cumulative cash flow} + \frac{\text{absolute value of last negative cumulative cash flow}}{\text{cash flow of the following year}}$$

Number of Years of negative cash flow	+	Absolute value of last negative cumulative cash flow
		Cash inflows of the following year
3	+	3,091,465
		11,381,306
3	+	0.27
PBP	=	3.27

Project PBP Results:

The project has recorded the PBP of all of its annual costs within three years and three months in operation, and this period does not exceed the expected economic life of the project, which is five years. This stresses that the project is financially feasible and its potential risks are reduced.

It is worth noting that the project has recovered its investment costs within a short period, which presents an opportunity for investors to reinvest the recovered capital in other projects or to make expansions in the project, and maximize ROI.

However, this indicator is criticized for having overlooked the time value of money, which will be taken into consideration later in NPV and IRR below.

IV: Net Present Value (NPV) and Internal Rate of Return (IRR):

NPV is the difference between the present value of net cash inflows during the operating years and the present value of net cash outflows throughout the set up phase. On the other hand, IRR is the discount rate at which project NVP is zero.

$$\text{Present value of cash inflows} = \sum \left[\frac{\text{net cash flow during the year}}{(1 + r)^i} \right]$$

By reviewing the estimated annual cash flow statements for the project, NPV can be calculated using a discount rate of 18%, and it represents the return requested by investors as follows:

٥	٤	٣	٢	١	صفر	السنوات
٣٩.٤٨٤.٤٧٩	١١.٣٨١.٣٠٦	١٠.٣٦٤.٧٨٥	٩.٤٤٠.٦٧٥	٨.٦٢٣.٠٧٥	(٣١.٥٢٠.٠٠٠)	صافي التدفق النقدي السنوي
٠,٤٣٧١١	٠,٥١٥٧٩	٠,٦٠٨٦٣	٠,٧١٨١٨	٠,٨٤٧٤٦	١	معامل القيمة الحالية لدفعة عند معدل خصم ٢٠% وعدد (ن) من السنوات
١٧.٢٥٩.٠٣٠	٥.٨٧.٠٣٥١	٦.٣٠٨.٣٢٨	٦.٧٨٠.١٤٦	٧.٣٠٧.٦٩١	(٣١.٥٢٠.٠٠٠)	القيمة الحالية للتدفق النقدي
١٢.٠٠٥.٥٤٥						صافي القيمة الحالية للتدفقات النقدية
%٣٠,٠٥						معدل العائد الداخلي

Years	السنوات
Net Annual Cash Flow	صافي التدفق النقدي السنوي
The Present Value Factor for an amount at discount rate of 20% and (i) years	معامل القيمة الحالية لدفعة عند معدل خصم ٢٠% وعدد (ن) من السنوات
Present Value of Cash Flow	القيمة الحالية للتدفق النقدي
NPV of Cash Flow	صافي القيمة الحالية للتدفقات النقدية
IRR	معدل العائد الداخلي

- PV of net cash inflows during the operating years = EGP 43,525,545
- PV of net cash outflows during the set up phase = EGP 31,520,000
- NPV = the present value of net cash inflows - the present value of net cash outflows.
- NPV = EGP 43,525,545– EGP 31,520,000= EGP 12,005,545

Project NPV & IRR Results:

The project recorded a positive NPV greater than zero, which means that the project fully recovered the capital; achieved RRR; and exceeded with surplus, thus, the project is financially feasible and is able to face the potential risks and its exposure to a decrease in its profits within the limits of the achieved surplus.

The project achieves IRR of 30%, which exceeds the IRR of 18%, thus the project is financially feasible.

VIII: Results and Recommendations:

According to the aforementioned:

- The project achieves ROI of 30.31%
- The PBP of the project is 3 years and 3 months
- The project achieves a positive NPV, and IRR of 30%

Thus, the project is feasible to be set up as per the assumptions of the study.

Note:

Data mentioned in this technical feasibility study are only guidelines of estimates that are based on the data provided by Industrial Development Authority (IDA).