Investment Opportunities Map

Jordan Investment Board

Glass Bottles Project

Pharmaceutical Sector

If interested in more information, kindly contact:

Jordan Economic and Commerce Bureau
Embassy of Jordan
3504 International Dr. NW
Washington, DC 20008
Tel: 202-362-4436
Fax: 202-244-0239
Email: JordanCTR@aol.com

PO Box 7976 Amman 11118 - Jordan
Tel: 962 6 4649040 Fax: 962 6 4649041
e-mail:info@mmis.net
http://www.mmis.net

PO Box 7976 Amman 11118 - Jordan
Tel: 962 6 4649040 Fax: 962 6 4649041
e-mail:info@mmis.net
http://www.mmis.net

The Project at a Glance	
Project Name	Glass Bottles Project
Project Production Capacity	26,000 tons / year
Manpower	160
Total Investment Cost	US$ 36,000,000
Initial Working Capital	US$ 1,200,000
Internal Rate of Return (IRR)	19.7 %
Breakeven Point	33% of Production Capacity

Glass Bottles Project

1. Introduction

1.1 Product Uses and Description

Glass bottles are an important part of the packaging requirements of the pharmaceutical industry .They are used to fill liquids, suspensions and powders.

The forms and sizes of glass containers in the pharmaceutical industry are:

- Vials (Bottles), up to 200 mm size
- Drops, up to 40 mm size
- Plasmas and flasks, up to 1000 mm size
- Pill bottles, up to 50 mm size
- Powder jars, up to 125 mm size.

Glass containers are produced in two colors, clear and amber. Vials (Bottles) are the mostly used type of glass containers by the Jordan Pharmaceutical industry.

1.2 Potential Consumers:

The pharmaceutical manufacturing companies will be the major consumers of glass bottles produced by the project. Food industry is the second potential consumer.

The project's potential clients, in general, are:

- Jordanian pharmaceutical and other industries.
- Foreign companies in joint-venture with Jordanian companies.
- Export markets.

2. Market Aspects

2.1 Trade Balance

The external trade balance of glass bottles and flasks of 0.15 liter volume or less showed deficit through the years 1992 – 2003 amounting to an annual average of 1,774 tons. In the absence of any local production, this quantity represented the domestic consumption, of which the pharmaceutical companies consumed a significant part.

Table (1)
External Trade Statistics
Glass bottles and flasks of 0.15 liter volume or less (Metric Ton)

Year	Imports	Exports	Re-Exports	Balance
1999	1,258	4	66	1,188
2000	2,683	15	1,481	1,187
2001	1,673	-	70	1,603
2002	3,608	-	37	3,571
2003	1,345	-	27	1,318
Average	**2,113**	**4**	**336**	**1,774**

Source: Department of Statistics.

2.2 Estimated Local Demand

Jordan's pharmaceutical manufacturing companies widely use glass bottles to fill pharmaceutical products. The most used sizes range between 100 and 200 ml.

Table No (2) summarizes the estimated local demand of the Jordanian pharmaceutical industry.

Table (2)
Estimated Jordanian Consumption of pharmaceutical Glass Bottles
(Million Units)

Size	2003	2004	Average
100 ml	2.49	2.55	2.52
125 ml	4.26	5.23	4.75
150ml	1.29	1.32	1.30
150 + 200 ml	0.98	1.0	0.99
Total	**9.02**	**10.1**	**9.56**

The current average annual demand is about 10 million units, which is equivalent to about 1,200 tons.

2.3 Forecasted Future Demand

Consumption of pharmaceutical products in Jordan increased by an annual average rate of 7 % in the past five years. In addition, there is a strong trend toward increasing exports. Thus, projecting the increase of future demand on glass bottles by 7 % per year is reasonable.

Table (3)
Forecasted Future Local Demand

Year	2005	2010	2015
Ton	1,284	1,800	2,526

The current annual demand by the Arab pharmaceutical industry is estimated at a total of 30,000 tons. It is expected that the total annual demand size of the Arab pharmaceutical industry will exceed 60,000 tons by 2015.

2.4 Imports & Competition

In the absence of local production in Jordan, imports are the only source of supply. Imports come from Saudi Arabia and Turkey, and also from Western Europe (France) but at higher prices .

2.5 Project Capacity

The proposed annual capacity of the project is 26,000 tons based on 335 working days / year and 24 working hour per day.

The project's annual production is expected to progress as in (Table 4):

Table (4)
Production Size Development

Year	Capacity Utilization	Ton
1	50 %	13000
2	70 %	18.200
3+	90 %	23.400

2.6 Projected Sales Revenues

The Jordanian pharmaceutical companies currently purchase glass bottles at an average price of US$ 8.5 / 100 units, which is equivalent to about US$ 680/ton.

The project's proposed product sales price is US$ 650 / ton. Thus, the estimated project revenues are shown in (table 5)

Table (5)
Projected Sales Revenues

Year	1	2	3
US$ Million	8.45	11.83	15.21

3. Technical Aspects

3.1 Project Location

The location of the glass bottles project is proposed to be in the southern province of Jordan, namely Ma'an district, due to the following factors:

- Availability of major raw materials (Silica & Limestone).
- Proximity to Aqaba port as an exporting point.
- Availability of the required manpower.

3.2 Manpower

Table (6)
Manpower Requirements

Job	Required No.
General Manager	1
Department Managers	4
Administrative Clerk	15
Engineer	12
Technician	48
Laborer	80
Total	**160**

The total annual salaries and wages of the above employees (including fringe benefits), in addition to overhead and administrative expenses are estimated at US$ 800 thousand.

3.3 Land & Buildings

Table (7)
Land and Buildings Cost

Item	Area m^2	Cost US$
Land	35,000	1,000,000
Buildings	25,000	3,520,000

3.4 Raw Materials

Silica and limestone represent the main raw materials needed for production. They are available locally, which is a major advantage to the project.

Other required raw materials, such as soda ash and additives, could be imported from Turkey and India.

3.5 Technology

Producing pharmaceutical glass bottles of high quality requires good know how and suitable technology.

Major technology and know how sources are France and Belgium. The estimated cost of technology and know how is about US$ 2 million. This cost is included in the machinery and equipment cost.

4. Financial Aspects

Basic Assumptions

The financial analysis and indicators are based on the following assumptions:

1. Project operational life is 10 years.
2. Internal Rate of Return (IRR) is calculated at 100% equity ratio.
3. Income tax is calculated at 15% on net taxable income.
4. Net Present Value (NPV) is calculated at 12% discounted annual rate.
5. Initial working capital is based on the operating expenses needed for three months.
6. Operating expenses comprise raw materials, labor cost and overheads, utilities and other expenses.
7. Pre -operating expenses consist of studies fees, capital issue, licensing, training, trial operations and other similar expenses.

4.1 Project Investment Cost

Table (8)
Total Investment Cost

Item	US$
Land	1,000,000
Buildings	3,520,000
Machinery & Equipment	26,000,000
Transport means	420,000
Sub- Total (Fixed Assets)	**30,940,000**
Contingency, (10%)	3,094,000
Pre – Operating Expenses	1,000,000
Initial Working Capital	1,198,000
Total Investment Cost	**36,232,000**

4.2 Financial Indicators

- ROI = 15.3 %
- IRR = 19.7 %
- NPV = 12.7 million US$
- BEP = 33 % of Production Capacity
- Payback Period = 5 Years.