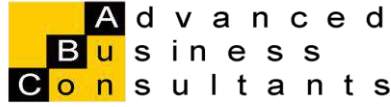


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PUBLIC ESTABLISHMENT FOR INDUSTRIAL ESTATES
SULTANATE OF OMAN

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PROJECT PROFILE FOR
HEAVY DUTY POLY ETHYLENE (PE) BAGS
MANUFACTURING UNIT IN OMAN

CONTENTS

1	INTRODUCTION.....	1
1.1	PROJECT BRIEF	1
1.2	PROJECT RATIONALE	2
2	INDUSTRY ANALYSIS	3
2.1	MACROECONOMIC CONDITIONS.....	3
2.2	TREND IN ECONOMIC DIVERSIFICATION	4
2.3	OVERVIEW OF PLASTIC INDUSTRY IN OMAN	5
2.4	VALUE-CHAIN OF PLASTICS / HEAVY DUTY PE BAGS.....	6
2.5	GCC VALUE CHAIN ANALYSIS	7
2.6	VALUE CHAIN IN OMAN	7
2.7	MISSING VALUE CHAIN ACTIVITIES IN OMAN.....	7
3	MARKET ANALYSIS	8
3.1	PRODUCT OVERVIEW.....	8
3.2	PRODUCT APPLICATION.....	8
3.3	INDUSTRY OVERVIEW.....	9
3.3.1	Global Scenario.....	9
3.3.2	Trade Statistics of Oman	11
3.3.3	Summary of Trade Statistics of GCC Countries	12
3.4	DEMAND ESTIMATION	13
3.4.1	GCC Polymer Production.....	13
3.4.2	Share of Commodity Polymers and other Polymers	14
3.4.3	Estimation of Local Demand	15
3.4.4	Estimation of Demand in other GCC countries.....	16
3.5	DEMAND PROJECTION.....	17
3.6	ANALYSIS OF COMPETITION.....	17
3.6.1	Major Sources of Supply	17
3.6.2	Marketing Mix Strategy of Competitors.....	18
3.6.3	Proposed Marketing Mix Strategy for the Project.....	19
3.7	PROJECTED MARKET SHARE.....	20

4	TECHNICAL ANALYSIS.....	21
4.1	LOCATION.....	21
4.2	MANUFACTURING PROCESS / TECHNOLOGY	21
4.3	PRODUCTION CAPACITY & UTILIZATION.....	22
4.4	BUILDING AND CIVIL WORKS	22
4.5	MACHINERY SUPPLIERS.....	23
4.6	VEHICLES	23
4.7	RAW MATERIAL REQUIREMENT.....	23
4.8	UTILITIES.....	23
4.8.1	Electricity.....	23
4.8.2	Water.....	24
4.9	MANPOWER REQUIREMENT	24
4.10	QUALITY CONTROL MEASURES	24
4.11	WASTE DISPOSAL AND ENVIRONMENTAL ASPECTS	24
4.12	SCHEDULE OF PROJECT IMPLEMENTATION.....	25
5	FINANCIAL ANALYSIS.....	26
5.1	COST OF PROJECT.....	26
5.1.1	Site development.....	26
5.1.2	Building & Civil Structures	26
5.1.3	Plant & Machinery	26
5.1.4	Vehicle & internal Transport.....	27
5.1.5	Furniture and office Equipment	27
5.1.6	Pre-operative expenses.....	27
5.1.7	Contingency & Escalation.....	27
5.1.8	Working Capital.....	27
5.2	MEANS OF FINANCE	28
5.2.1	Equity Capital.....	28
5.2.2	Term Loan from Bank	28
5.3	COST OF SALES.....	29
5.3.1	Raw Materials.....	30

5.3.2	Utilities.....	30
5.3.3	Salaries & Wages.....	30
5.3.4	Factory overheads.....	30
5.3.5	Administrative Expenses.....	30
5.3.6	Sales Expenses.....	30
5.3.7	Depreciation.....	31
5.3.8	Loan and interest calculation.....	31
5.4	WORKING RESULTS.....	32
5.5	COST RATIOS.....	33
5.6	KEY FINANCIAL INDICATORS.....	33
5.7	SENSITIVITY ANALYSIS.....	34
6	CONCLUSIONS AND RECOMMENDATIONS.....	35

ANNEXURE - FINANCIAL WORKINGS

1 INTRODUCTION

1.1 PROJECT BRIEF

The Project Profile details the feasibility of setting up a Heavy Duty PE bags manufacturing unit the Sultanate of Oman. The following is the Brief illustration of the project:

PROJECT BRIEF		
Name of Project	Heavy Duty PE Bags manufacturing Unit	
Size of Domestic Market	45 Million Bags per Annum	
Capacity of the Project (Will cater to GCC market as well)	25 Million Bags per Annum (3,250 Tons per Annum)	
Category	Medium Sized Industry	
Total Investment	RO 1,828 Million	
Equity Investment	RO 730,000	
Key Appraisal Criteria:		
IRR on total investment	16.23%	
IRR on Equity	23.46%	
Payback period of Total Investment	6 Years 2 month	
Payback period on equity	6 Years 1 month	
Break Even Point (as % of Production)	69.6%	
Cash Break Even Point (as % of Production)	55.8%	
Debt Equity Ratio	1.50:1	
DSCR	2.01	
Manpower	Total	29
	Nationals	14

1.2 PROJECT RATIONALE

The project can be established in Oman for its competitive advantages, mainly due to lower cost of land rentals at Industrial Cities of MADAYN, lower utility rates when compared to most of the GCC countries and the proximity to desired raw material & potential target markets.

2 INDUSTRY ANALYSIS

2.1 MACROECONOMIC CONDITIONS

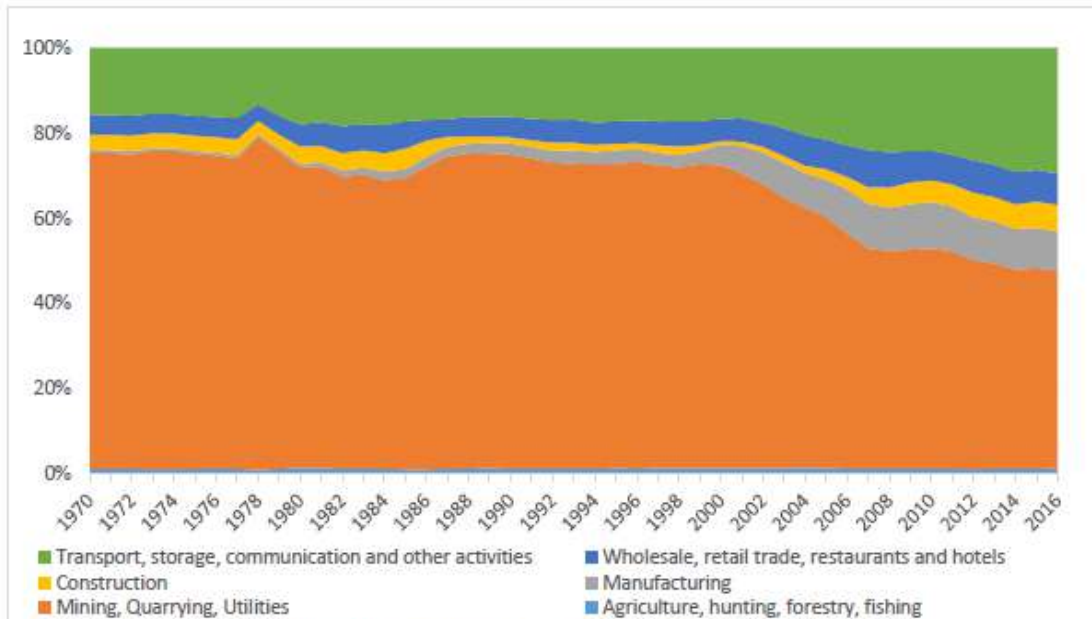
The recently published statistical bulletin from National Centre for Statistics and Information (NCSI) indicates that the GDP at market prices reduced by 15% during Year 2020 when compared to the Year 2019. This is mainly due to the dual impact of slump in oil prices and the COVID - 19 pandemic. As per the World Bank outlook a revival is expected in 2021 and in 2022 on an average of around 4%. The estimated GDP of Oman considering the past trend, current situation and the expected recovery is illustrated below:



Our average price of Oil for 2020 is USD 46/Barrel. We expect this to go up to USD 50/barrel in 2021 and USD 60/barrel in 2022.

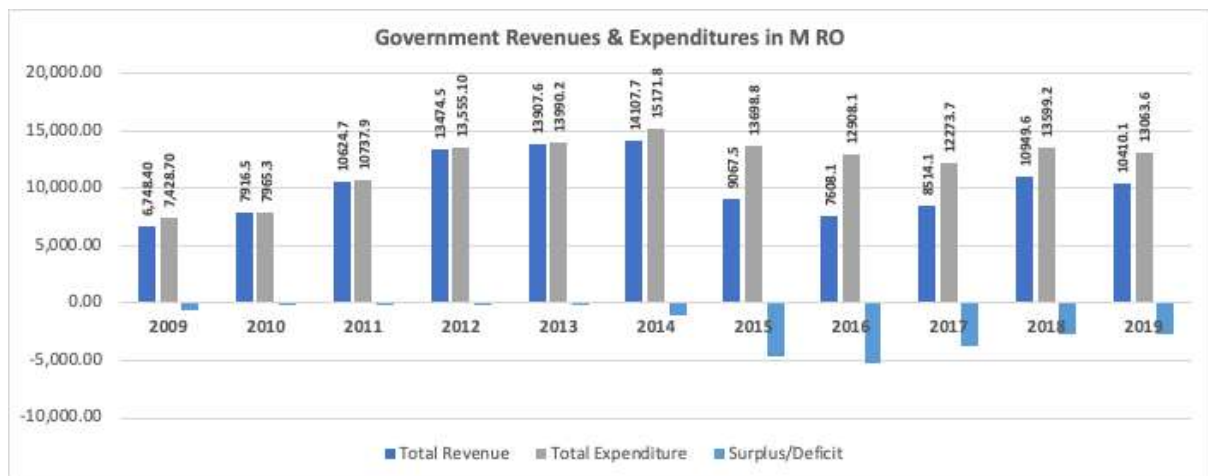
2.2 TREND IN ECONOMIC DIVERSIFICATION

Since the beginning of the millennium our economic activity has significantly moved away from oil as indicated below. The following graph gives data up to 2016. In 2019 Crude Petroleum contributed to 29.11% of GDP.



Source: UNIDO elaboration based on UN Statistics Division (2018)

However the Government income is still substantially dependent on Oil sector. The tightening of spending, introduction of VAT and increased revenues from Gas are expected to contain deficits to manageable levels by 2022.

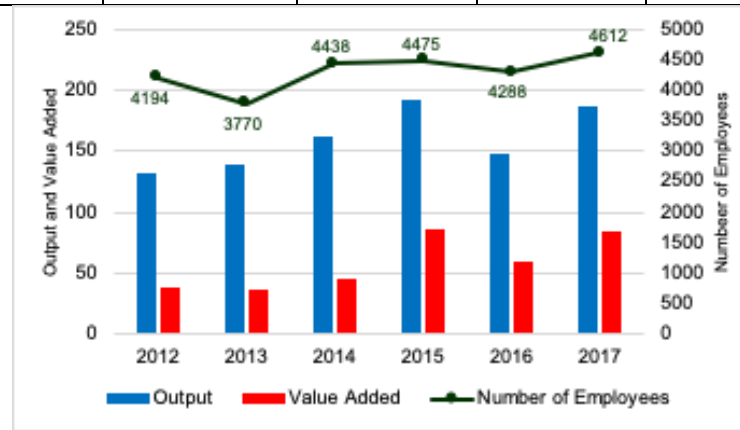


2.3 OVERVIEW OF PLASTIC INDUSTRY IN OMAN

The following table illustrates the overall performance of the Plaster Sector in Oman.

As per the yearly industrial statistical book, the combined value of the output from the plastics sector units in Oman was RO 186.8 million in the year 2017. In the year 2017, the Value added for the plastic sector was RO 83.9 million.

Year	Total units	Total Employees	Book Value of Fixed Assets (VFA)	Materials	Imported Materials	Output	Value Added (VA)	Labour Efficiency (RO/Employee)	Capital Efficiency (VA/VFA)
	Nos		(RO Million)					Rial Omani	
2012	51	4194	80.5	81.8	70.4	132.3	38.5	9180	0.48
2013	49	3770	81.3	87.6	79.8	138.8	36.9	9791	0.45
2014	51	4438	236.3	98.9	83.5	161.9	44.7	10070	0.19
2015	53	4475	118.9	85.9	68	192.8	85.5	19108	0.72
2016	54	4288	96.5	71	60.9	147.5	58.9	13744	0.61
2017	59	4612	112.7	85.6	71.4	186.8	83.9	18193	0.74



2.4 VALUE-CHAIN OF PLASTICS/HEAVY DUTY PE BAGS

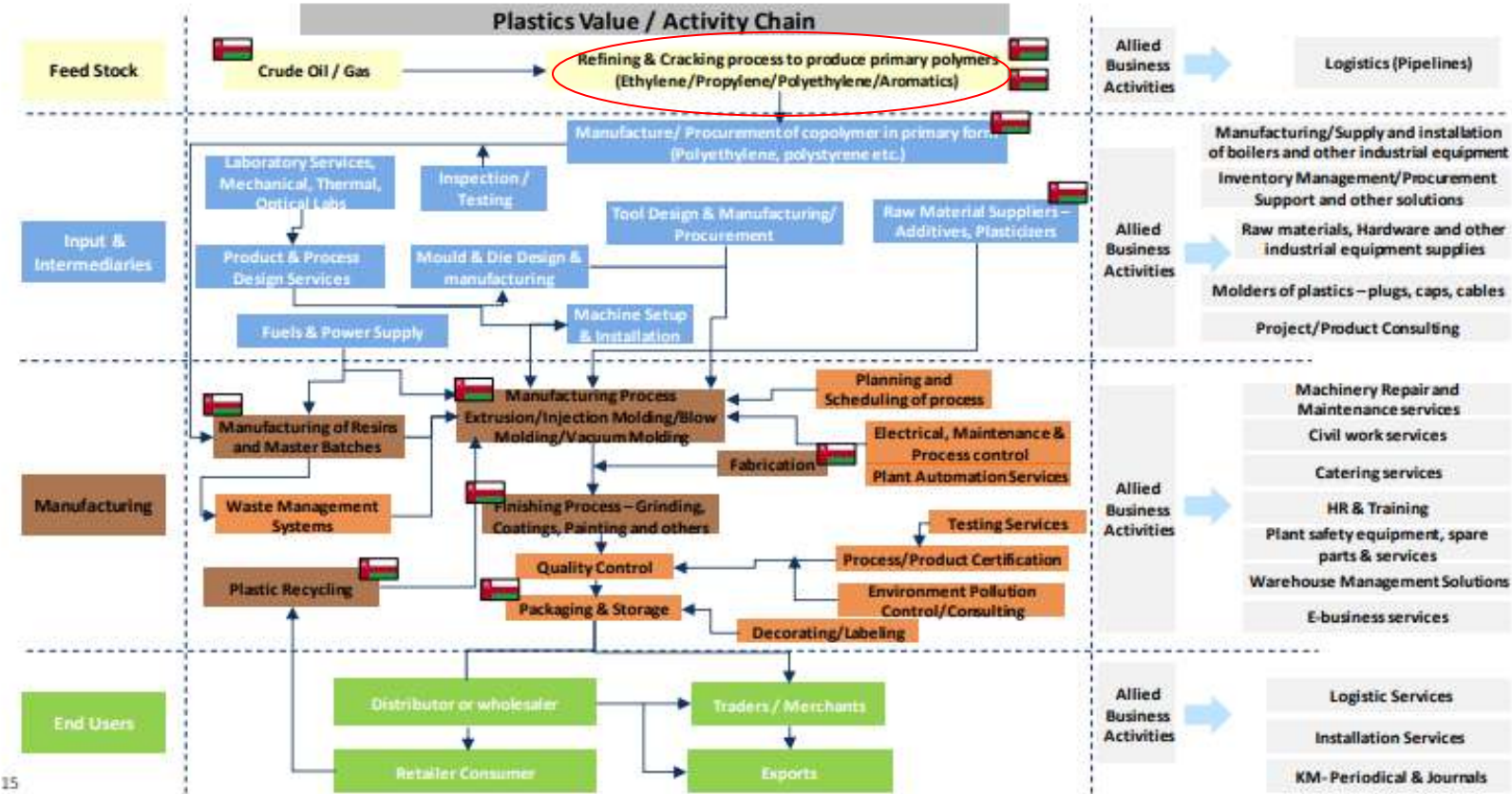
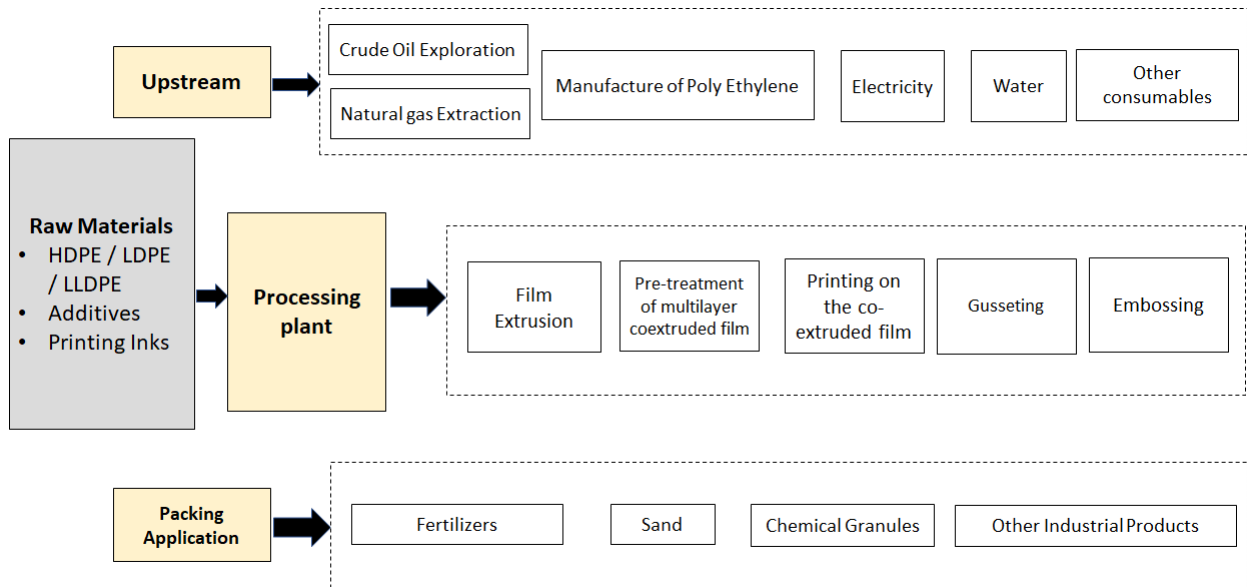


Figure 2-7: Plastic Value / Activity Chain

Core Activities Support activities Oman Presence

The following chart illustrates the value chain of Heavy Duty PE bags:



2.5 GCC VALUE CHAIN ANALYSIS

All the upstream activities are prevalent in the GCC countries. There are PE bag manufacturers in Saudi Arabia, Qatar, UAE and Kuwait. The bags are consumed in both the GCC market as well as the global market. The Import and Export Statistics details of GCC are in the subsequent sections of this report.

2.6 VALUE CHAIN IN OMAN

The raw material is available in Oman. However, there are no major Heavy Duty PE bags manufacturer in Oman. One of the units in Oman is envisaging to set up the facility in Oman.

2.7 MISSING VALUE CHAIN ACTIVITIES IN OMAN

While key raw materials are locally produced, the actual production of Heavy Duty PE bags is not prevalent in Oman and the products are imported.

3 MARKET ANALYSIS

3.1 PRODUCT OVERVIEW

Heavy Duty Poly Ethylene Bags (PE Bags) are predominantly used as low cost packing concept mainly for dry solids, pellets, flakes, powders, crystals, fibrous materials and slurries or pastes.

Typically, Fill Form Seal (FFS) concept of packing is considered and these bags are manufactured as PE rolls. The bag is formed on the bagging machine from these roll of film, immediately filled and then sealed across the top. The tubular film can be with 4 color print, with side folds and embossed, to prevent filled bags from slipping during storage and transport.

The reason for the rising demand of FFS packing is for the following qualities:

- Less expensive
- Stronger with Ease of use
- Reliability in automating the bagging operation
- Reduced number of operators on the bagging line
- Improved productivity owing to a dramatic increase of packing rate.

3.2 PRODUCT APPLICATION

Heavy Duty PE Bags (as FFS film rolls) are used across various industries for different applications as highlighted below:

- Food industry - for salt, sugar, pasta packaging
- Construction industry - for chalk, plaster
- Agriculture - for soil packaging
- Chemical Industry - Packing of granulate material
- As Heavy duty sacks

3.3 INDUSTRY OVERVIEW

3.3.1 Global Scenario

The global market for Plastics Bags during the Year 2020 was estimated at USD 20.4 Billion. Amid the COVID - 19 crisis, there was a growth in demand and the market was expected to have reached around USD 22 Billion by the end of Year 2020. The market is expected to reach around USD 22.9 Billion by 2027¹.

The 6-digit Harmonized Tariff System code prefix is 392321 for Bags and Sacks of Poly Ethylene. The following sections provide an overview of the global trade of PE bags and sacks.

It is to be noted that all types of bags and sacks of Poly Ethylene are covered under the above referred HS code. Heavy Duty PE bags are only a part of this total value. The following Import Export Statistics of Global Market, GCC and Oman is just for understanding the trend in the overall market. The actual demand estimation for Oman and GCC are further detailed in the subsequent sections of this report.

3.3.1.1 Major Global Exporters - Values in Million USD

Exporters	2016	2017	2018	2019	2020
China	2,656	2,717	2,928	2,624	2,745
Germany	940	997	1,053	986	987
USA	717	747	773	746	772
Viet Nam	541	638	757	792	762
Thailand	585	607	649	627	650
Canada	468	486	532	569	595
Poland	303	332	425	402	387
Malaysia	359	366	420	430	387
United Kingdom	282	225	299	326	333

¹ Source: Intrado Global Newswire

Exporters	2016	2017	2018	2019	2020
Turkey	227	246	280	307	329
Others	3,800	3,784	3,983	3,779	3,498
TOTAL	10,878	11,144	12,100	11,590	11,446

3.3.1.2 Major Importers - Values in Million USD

Importers	2016	2017	2018	2019	2019
USA	2,314	2,389	2,590	2,461	2,700
Japan	1,220	1,248	1,365	1,292	1,129
Germany	725	745	815	765	718
United Kingdom	611	631	721	680	648
Canada	453	483	501	456	465
France	443	501	492	476	458
Netherlands	341	353	398	397	396
Australia	348	355	377	316	336
Mexico	259	260	293	298	279
Belgium	188	208	224	178	189
Others	3,464	3,660	3,811	3,708	3,672
TOTAL	10,365	10,831	11,589	11,026	10,991

3.3.1.3 Major Global Producers

The market is highly competitive in nature owing to the presence of several major players.

Company		Country
1	Amcor PLC	Switzerland
2	Bemis Company	United States
3	Interplast Group	United States
4	Novolex Holding	United States
5	Ailu Pack	China

3.3.2 Trade Statistics of Oman

The following sections provide an overview of the Import Export statistics of Oman. It is evident from the table below that Oman is a net Importer of Bags and Sacks of PE.

3.3.2.1 Imports

Exporters	2014		2015		2016		2017		2018		
	Qty in Tons	Value in '000 USD	Qty in Tons	Value in '000 USD	Qty in Tons	Value in '000 USD	Qty in Tons	Value in '000 USD	Qty in Tons	Value in '000 USD	USD per Ton
UAE	4,245	5,447	4,283	4,993	1,432	2,544	2,331	3,327	3,485	6,117	1,755
Saudi Arabia	161	487	250	580	317	984	258	814	204	583	2,858
China	158	549	165	2,793	269	706	275	461	175	302	1,726
India	354	1,542	208	633	88	159	37	92	119	281	2,361
Bahrain	360	797	336	760	347	747	237	528	30	74	2,467
Thailand	22	91	22	76	52	133	13	62	23	123	5,348
Canada	3	45	4	28		0	13	83	5	33	6,600
Others	184	736	377	1,374	153	663	35	230	9	42	4,667
TOTAL	5,487	9,694	5,645	11,237	2,658	5,936	3,199	5,597	4,050	7,555	1,865

3.3.2.2 Exports

Importers	2014		2015		2016		2017		2018		
	Qty in Tons	Value in USD '000	Qty in Tons	Value in USD '000	Qty in Tons	Value in USD '000	Qty in Tons	Value in USD '000	Qty in Tons	Value in USD '000	USD Per Ton
Qatar	0	0	0	0	10	30	201	586	242	803	3,318
Egypt	0	0	804	2,308	964	3,238	584	1,761	218	673	3,087
UAE	125	73	78	98	137	200	273	420	133	226	1,699
Djibouti	0	0	0	0	0	0	19	63	90	246	2,733
Yemen	0	0	0	0	0	0	26	23	78	291	3,731
Others	226	557	1,678	4,745	1,748	4,775	1,546	3,346	381	1,210	3,176
TOTAL	351	630	2,560	7,151	2,859	8,243	2,649	6,199	1,142	3,449	3,020

3.3.3 Summary of Trade Statistics of GCC Countries

The following sections provide an overview of the Import Export statistics of the GCC countries.

Details	2015	2016	2017	2018	2019	2019	USD per Ton
	Figures in Tons					Figure in USD '000	
QATAR							
Import	0	0	2,389	2,040	1,992	6,334	3,180
Export	0	0	0	0	0		
Net Import	0	0	2,389	2,040	1,992		
UAE							
Import	4,822	5,146	5,455	3,957	3,602	15,757	4,375
Export	7,410	6,376	7,161	17,614	17,712	32,576	1,839
Re Export	1,756	1,218	1,353	0	1,535		
Net Import	(4,344)	(2,448)	(3,059)	(13,657)	(15,645)		
BAHRAIN							
Import	1,339	1,534	1,942	1,916	1,473	4,224	2,868
Export	1698	1937	1153	31	65	178	2,738
Re Export	35	53	79	19	0		
Net Import	(394)	(456)	710	1,866	1,408		
KUWAIT							
Import	3,203	2,996	4,262	4,674	3,773	11,493	3,046
Export	3200	1862	2239	1,527	983	1,546	1,573
Re Export	60	26	229	0	26		
Net Import	(57)	1,108	1,794	3,147	2,764		
SAUDI ARABIA							
Import	0	12076	13,652	9,821	10,087	28,223	2,798
Export	0	10246	13,689	22,225	32,625	52,550	1,611
Re Export	70	885	508	717	0		
Net Import	(70)	945	(545)	(13,121)	(22,538)		

It could be seen from the table above that Qatar, Bahrain and Kuwait are net importers of Bags & Sacks of PE and are the potential target markets in GCC.

3.4 DEMAND ESTIMATION

The product under study is Heavy Duty Poly Ethylene (PE) based film rolls used for mainly packing polymer granules.

The target market is predominantly Oman and other GCC countries including Saudi Arabia, UAE, Bahrain, Qatar and Kuwait. Even though Saudi and UAE are net exporters, the procurement of bags by some of the major companies in GCC (for packing polymers) is through a tendering process. Hence, the proposed project can envisage the possibility of participating in these tenders for the sale of the product.

The demand estimation for bags is also based on the demand for packing polymer materials in Oman and in other GCC countries.

3.4.1 GCC Polymer Production

Polymer production in GCC during the year 2016² is as detailed in the table below:

Country	Estimated Production (Million tons)	Share of Total (%)
KSA	18.2	67%
UAE	4.7	18%
Qatar	2.2	8%
Kuwait	1.0	4%
Oman	0.9	3%
Total	27.0	100%

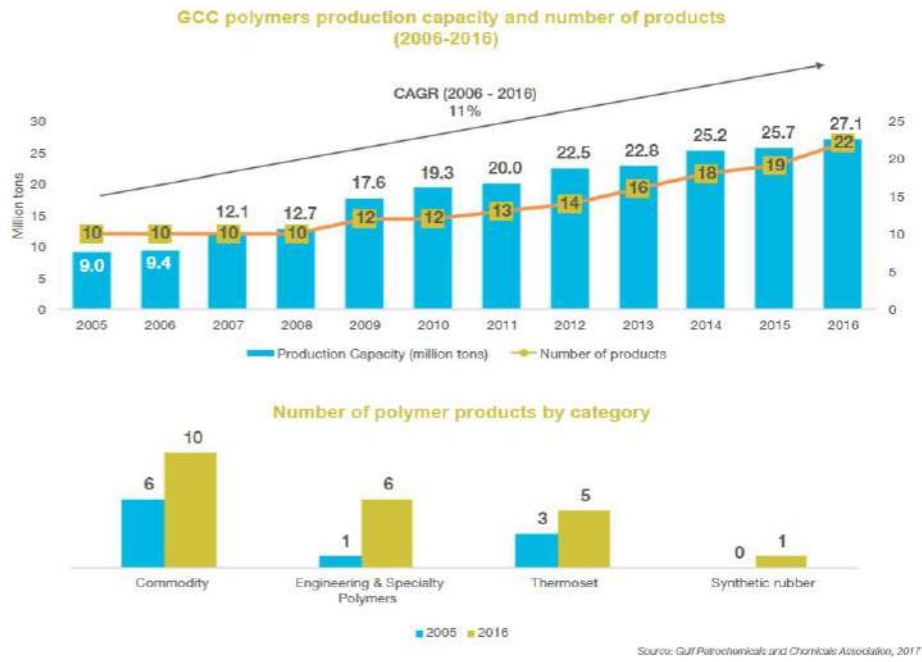
It is to be noted that

- Saudi Arabia and UAE holds around 85% of the total polymer production in GCC.

² Latest numbers are not available. Hence the data up to the Year 2016 was analyzed and reasonably extrapolated to arrive at the numbers of the subsequent years.

- GCC polymer production capacity has grown steadily over the past ten years from a capacity of 9 million tons in 2005 to 27 million tons in 2016.
- The capacity increase is evident in terms of increased product range as well as increased capacity of major product lines.

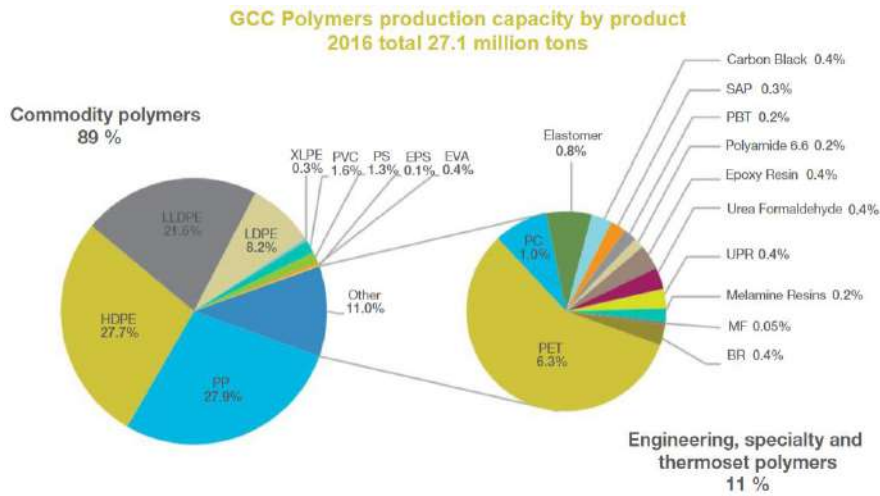
The following chart depicts the growth of polymer production in GCC.



3.4.2 Share of Commodity Polymers and other Polymers

It is to be noted that commodity polymer constitute about 90% of the total polymer production whereas the remaining 10% is engineering / specialty polymers.

The chart below details polymer production capacity by product.



The table below details the % share of commodity polymer and other polymers:

Total production of Polymer Products	Share of total polymer production	Estimated Production (Million tons)
PP	27.9%	7.6
HDPE	27.7%	7.5
LLDPE	21.6%	5.9
LDPE	8.2%	2.2
Others	14.6%	4.0
Total	100%	27.1

3.4.3 Estimation of Local Demand

The two polymer manufacturing units in the Sultanate are

- **ORPIC - Oman Oil Refineries and Petroleum Industries Company**
 - ORPIC manufactures polypropylene (PP)
 - The current capacity of PP at ORPIC is 400,000 tons
 - ORPIC has commissioned Liwa project manufacturing PE products
 - The capacity of PE products will be around 1 million tons.
 - Expected total capacity of ORPIC including both PP and PE is around 1.4 million tons

- **OCTAL**

- Octal manufactures PET granules
- The unit currently has a capacity of 1 million tons per annum

It is evident from the two companies above that the total polymer production capacity in Oman is around 2.4 million tons (400,000 tons of PP & 1 Million tons of PE by ORPIC and 1 Million tons of PET by OCTAL)

Considering the fact that PET is mostly packed in Jumbo bags, PE bag requirement is estimated based on the capacity of ORPIC alone i.e., 1.4 million tons.

With conservative production level of 80%, the production of polymers by ORPIC is pegged around 1.12 million tons.

With a pack size of 25 kg, the estimated annual requirement is around 44.8 million bags.

3.4.4 Estimation of Demand in other GCC countries

Based on the production capacity of polymers during 2016, the demand for PE bags is as detailed in the table below:

Country	Estimated Polymer Production (Million tons)	Estimated production of commodity polymers (90% of Total) (Million Tons)	Estimated requirement of FFS bags (25 kg. pack size)
KSA	18.2	16.3	653,652,000
UAE	4.7	4.3	170,730,000
Qatar	2.2	2.0	78,048,000
Kuwait	1.0	0.9	37,072,800
Total	26.1	23.5	939,502,800

Based on the above analysis, the total demand for FFS bags (of 25 kg) in GCC including Oman during 2016 is around 985 Million Bags. The polymer production in GCC between 2005 and 2016 is grown at a CAGR of 11%. Considering a conservative growth of 5%, the total demand for 2019 is estimated to be around 1,140 million bags.

3.5 DEMAND PROJECTION

The outbreak of COVID and the reduction in oil demand had major impacts on most of the businesses across the globe and in Oman as well. Hence, a 20% total drop in GCC demand was considered for the Year 2020 and 2021. There is no growth expected in 2022. With the market expected to bounce back thereafter, a conservative growth of 5% is considered from Year 2023 onwards and the following table illustrates the demand projection in the following years.

Year	2019	2020	2021	2022	2023	2024	2025
Growth rate		-15%	-5%	0%	5%	5%	5%
Estimated Demand (In Million Nos.)	1,140	969	921	921	967	1,015	1,066

3.6 ANALYSIS OF COMPETITION

3.6.1 Major Sources of Supply

Currently there are no major local producers of Heavy Duty PE bags in Oman. One of the units is in the process of setting up the unit in Oman.

Typically, each line of production manufactures around 20-24 million bags and based on this assessment, there are around 40 lines in GCC of which 27 lines are operating in Saudi Arabia. There are two major players in Iran and they cater to the demand of the global market.

The details of major players in GCC and in Iran are as highlighted in the table below:

Company		Location
1	Napco National	KSA
2	Qatar Plastic Products Company (QPPC)	Qatar
3	Interplast	UAE
4	RAK Petropack	UAE
5	Fujairah Plastics Factory	UAE
6	Boubyan Plastics Industries Co. (BPIC)	Kuwait
7	Petro Pack	Iran
8	Arta Group	Iran

3.6.2 Marketing Mix Strategy of Competitors

3.6.2.1 Product and its Specifications

PE FFS rolls are produced based on the specifications given by the customers. Typical specification is as follow:

- Film Thickness - 30 – 300 microns
- Width: From 400 mm up to 800 mm, with or without gusseting
- Roll Width - 30 – 65 cm
- Side Gusset Size -3.5 – 9 cm
- Roll Outer Diameter - Up to 1.3 m & as per customer requirements
- Film Color as per requirements
- Printing: Up to 6 Colors. One and/or double side printing

3.6.2.2 Pricing

The pricing of the products by the major players are either in Per piece basis or in Per ton basis based on the volume of supply to the customer.

The ex-factory prices are in the range of

- USD 0.30 – 0.40 per piece or
- USD 2,300 – 3,000 per ton

3.6.2.3 Promotion

The sale of PE FFS rolls by these major players in GCC is predominantly through the tendering process floated by the customer.

3.6.2.4 Distribution

The PE FFS rolls are manufactured based on the end user specification and the required quantity. The produced products are stored in-house and sold directly to the customers. The associated logistics cost is added to ex-factory price while delivering the product to the customer.

3.6.3 Proposed Marketing Mix Strategy for the Project

3.6.3.1 Product Specification

Product Type: Form-Fill-Seal (FFS) heavy duty PE Film Rolls with printing (4 colour), gusseting & embossing.

Materials used: LDPE, LLDPE, mLLDPE, HDPE, additives master-batch (colour / UV/ anti-slip etc.)

Film thickness: 80 µm - 200 µm

Lay flat range: 450 - 700 mm

Actual output will depend on the resins to be used and the film structure. This shall be arrived on the specifications to be provided by the customer.

3.6.3.2 Pricing

The pricing of FFS rolls vary based on the specifications and the volume requested by the customer. Based on the market details, average price of FFS rolls (ex-factory) considered for financial analysis is as follows:

- USD 0.29 per piece (RO 0.111 per piece) or
- USD 2,230 per ton (RO 861 per ton)

3.6.3.3 Promotion

The sale will be mainly in the Sultanate and in the GCC through the tendering process floated by the customer.

3.6.3.4 Distribution

PE FFS rolls produced shall be stored in-house and will be delivered directly to the customers. The product will be delivered through rented trucks and the logistics cost shall be appropriately added to the ex-factory price of PE FFS rolls.

3.7 PROJECTED MARKET SHARE

The unit with a production capacity of 3,250 tons per annum shall effectively leverage its capability to service various customers.

Detail	2023	2024	2025	2026
Estimated Demand (in Mn Nos.)	967	1,015	1,066	1,119
Projected sale (in Mn Nos.)	15	17.5	20	22.5
Market share %	1.55%	1.72%	1.88%	2.01%

It may be noted that the projected market share in GCC is very minimal and are achievable.

4 TECHNICAL ANALYSIS

4.1 LOCATION

The proposed manufacturing unit will be established in a total land area of 10,000 Sq. m. The plot area will be secured on a long term lease and Sohar Industrial City could be the preferred location based on the availability of raw material and the nearness to the port for potential exports.

4.2 MANUFACTURING PROCESS/TECHNOLOGY

The Proposed Project will be producing Heavy Duty Polyethylene film rolls (bags) with printing, gusseting & embossing film-rolls for various packaging use. The product is a three-tier co-extruded (multi-layer) film, made from LLDPE, HDPE, MLLDPE and other raw materials.

The production process involves extruding a tube of molten polymer through a die in an extruder, inflating to several times its initial diameter to form a thin film bubble by blowing air.

This bubble is then collapsed and used as a lay-flat film or can be made into bags using the necessary up/downstream equipment system. Usually polyethylene is used with this process, and other materials can be used as blends with these polymers.

The proposed project being a multi-layer film based production will have three extruder joints under single line set-up to manufacture through molten co-extrusion, blown filming, electric corona, printing, gusseting, embossing and rolling. Subsequently the film rolls will be dispatched to the customer.

The manufacturing of such multilayer co-extruded film based on the blown film technique consists of the following steps.

- Film Extrusion
- Pre-treatment of multilayer coextruded film
- Printing on the co-extruded film
- Gusseting and Embossing

4.3 PRODUCTION CAPACITY & UTILIZATION

The proposed project production capacity is around 3,250 Tons per year through single line production operating 2 shifts x 300 days in a year.

Details of capacity /capacity utilization are given below.

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Installed Capacity (Tons)	3,250	3,250	3,250	3,250	3,250
Capacity Utilization	60%	70%	80%	90%	90%
Actual Production (Tons)	1,950	2,275	2,600	2,925	2,925

4.4 BUILDING AND CIVIL WORKS

The plant will be established in a land area of 10,000 Sq. m. The following table details the actual area to be built for overall operations:

S. No.	Item of work	Area in Sq. m
1	Building for housing Plant and Machinery	1,610
2	Area for Finished Goods	
3	Workshop	
4	Administrative and Sales Office including Rest Rooms, Change Rooms and Canteen	
5	Area for Raw Material	1,000
Total Constructed Area		2,610
Parking Area for Vehicle Movement and for Other Purposes including Roads, Fencing, Office Parking etc.		7,390
TOTAL		10,000

4.5 MACHINERY SUPPLIERS

The major global machinery supplier details are as below:

- M/s. Han King Plastic Machinery Co. Limited, China
- M/s. General Extrusion Technology, China
- M/s. Kabra Extrusion Technik, A Kolsite Group Company, India
- M/s. BANDERA, Italy
- M/s. BFM, Italy for Printing Machines
- M/s. Windmoller & Holscher, Germany
- M/s REIFENHAUSER, Germany

4.6 VEHICLES

Vehicles are required for officers and a forklift is required for industrial operation.

4.7 RAW MATERIAL REQUIREMENT

The raw materials required for the project are as follows:

- PE including LDPE / LLDPE / HDPE
- Additives including white Masterbatch, UV stabilizer, slip agent processing aids, etc.

4.8 UTILITIES

The following sections give the utilities requirement of the unit.

4.8.1 Electricity

The total connected load of the plant is around 380 kW. Thus, the estimated energy requirement at 100% of the installed capacity is taken as 2.1 Million KWhr per annum.

4.8.2 Water

The water requirement for process along with human consumption is estimated at around 7,000 Cu. m per annum.

4.9 MANPOWER REQUIREMENT

The total manpower required for the operation is 29. The annual wages and salaries include 40% additional benefits on basic salary. The details are provided in Annexure 2.3.

4.10 QUALITY CONTROL MEASURES

The necessary/required testing equipments are included in the project for testing & ascertaining the quality of both the incoming raw material as well as to ensure the performance of the product by testing the properties as per standard / customers' specifications.

4.11 WASTE DISPOSAL AND ENVIRONMENTAL ASPECTS

The manufacturing process involved in film production line has no wastages. In the printing line, very minimal quantity of solvent vapors used in printing inks are let out into the atmosphere and will be within the prescribed environmental norms. The other waste plastic materials generated from the unit are normally recycled and re-used again in the process. Following are the key aspects of the wastes generated:

- There is no gaseous emission
- The solid and liquid wastes are limited to the municipal waste. The project shall be located in an approved industrial zone and the waste (limited to waste generated by humans) shall be delivered to the Municipal waste management system.
- The noise level shall be maintained below the prescribed levels.

4.12 SCHEDULE OF PROJECT IMPLEMENTATION

The critical activities include identification and allotment of land, civil construction and the erection of the plant. It will take about 18 months for completing erection, testing and commissioning of the plant.

5 FINANCIAL ANALYSIS

The findings of the Financial Analysis is as detailed below:

5.1 COST OF PROJECT

The total cost of the project is as detailed in the table below and the details are provided in Annexure 1:

Project Cost	Amount in RO
Land Development for Plant Site	65,000
Building etc.	368,000
Plant & Machinery	856,000
Vehicles & Int. transport	39,000
Furniture & Office Equip.	9,000
Pre- Operative Expenses	99,000
Contingency & Escalation	72,000
Sub Total	1,508,000
Working capital	320,000
Total Project Cost	1,828,000

5.1.1 Site development

The total cost of site development is RO 65,000 and the details are provided in Annexure 1.1.

5.1.2 Building & Civil Structures

The total cost of building and civil works is estimated at RO 368,000. The detailed break-up is given in Annexure 1.2.

5.1.3 Plant & Machinery

The total cost of the plant and machinery is estimated at RO 856,000 and the detailed break-up is given in Annexure 1.3.

5.1.4 Vehicle & internal Transport

The total cost of vehicles for personnel transport and for plant operation works out RO 39,000 and the detailed break up is given in Annexure 1.4.

5.1.5 Furniture and office Equipment

Furniture and office machinery includes computers, office equipment, air conditioners, furniture and furnishings and furnishing cost for employees. The total cost of the same is estimated at RO 9,000 and the details are provided in Annexure 1.5.

5.1.6 Pre-operative expenses

The pre-operative expenses include expenses for feasibility study, expenses up to company formation, interest during project implementation, project management fee, salaries and wages of project staff, travel and communication, legal fees, audit fees and other miscellaneous expenses. The total pre-operative expenses are estimated at RO 99,000 and the detailed break up is given in Annexure 1.6.

5.1.7 Contingency & Escalation

A provision of 5% of the estimated cost of items including plant & machinery, vehicles, etc., is made to account for any currency fluctuation, unforeseen expenses and price escalation. This works out to RO 72,000 and the detailed break up is given in Annexure 1.7.

5.1.8 Working Capital

The assumptions are made as follows. The break up is given in Annexure 1.8

- Account receivables - 60 Days
- Raw materials - 45 Days
- Consumables and packing - 1 month
- Utilities - 1 month
- Factory wages - 1 month

- Administrative Expenses - 1 month
- Sales Expenses - 1 month
- Work in progress - 3 days
- Finished Goods - 15 days
- Finance Cost - 1 month

The working capital (WC) requirement for the project is as detailed below:

Year 1	Year 2	Year 3	Year 4
<i>Figures in RO '000</i>			
320	358	394	430

5.2 MEANS OF FINANCE

It is proposed to finance the Project as follows:

Means of Finance	Total
Equity	731,200
Term Loan at 6% Interest Rate	872,800
WC Loan from Commercial Bank	224,000
TOTAL CAPITAL	1,828,000

5.2.1 Equity Capital

The proposed equity contribution for the Project will be RO 731,200, which is around 40% of the total project cost.

5.2.2 Term Loan from Bank

Term loan of RO 872,800 is proposed to be availed from commercial banks in Oman at an interest rate of 6% and the loan is proposed to be repaid in 7 years period from the second year of operation. Working capital loan of RO 224,000 would be availed at a rate of 6% per annum. The details are given in Annexure 2.8.

5.3 COST OF SALES

The cost of sale for first ten years of operation is given in Annexure 2:

Details		1	2	3	4	5
		<i>Figures RO '000</i>				
1	Raw Materials	1,091	1,273	1,455	1,637	1,637
2	Packing Materials	11	13	15	16	16
3	Utilities	43	50	57	64	64
4	Factory Wages	122	125	129	133	137
5	PRIME COST	1,267	1,461	1,656	1,851	1,855
6	Rent for land	10	10	10	10	10
7	Factory Overheads	13	15	17	17	17
8	Misc. Factory Expenses	26	27	28	28	29
9	FACTORY COST	1,315	1,513	1,711	1,906	1,911
10	Admin. Salaries	109	112	116	119	123
11	Admin. Expenses	9	9	10	10	11
12	Total Admin Expenses	118	122	126	130	134
13	Sales Salaries	39	41	42	43	44
14	Advert.& Business Promotion	25	29	34	38	38
15	Total sales & dist.: costs	65	70	75	81	82
16	OPERATING COST	1,498	1,705	1,912	2,117	2,127
17	Finance cost					
18	Interest on Institutional finance	52	50	43	36	28
19	Interest on working capital	13	13	13	13	13
20	Total finance cost	66	64	56	49	41
21	Non-cash expenses					
22	Depreciation(New)	123	123	123	123	123
23	Prelim Expenses written off	99	0	0	0	0
24	COST OF SALE	1,786	1,891	2,091	2,288	2,291

5.3.1 Raw Materials

The total cost of raw materials for is RO 1.819 Million per annum at 100% capacity utilization. The details are provided in Annexure 2.1.

5.3.2 Utilities

The project will require 2.1 million units of electricity per annum and around 7,000 cubic meters of water. The total cost of utilities is RO 70,990 per annum. Details are given in Annexure 2.2.

5.3.3 Salaries & Wages

The salaries and wages include basic salary and about 40% of the basic salary is provided additionally as staff benefits for the FFS project. The annual cost of wages is around RO 270,480 and detailed further in Annexure 2.3.

5.3.4 Factory overheads

The annual expenses include repairs and maintenance, cost of spares, insurance and vehicle expense and the same is estimated at RO 12,672 for the first year, RO 14,889 for the second year and RO 17,105 in the third year. Details are given in annexure 2.4.

5.3.5 Administrative Expenses

The basis of estimates of administrative expenses for the proposed project inclusive of salaries & wages is given in Annexure 2.5 and it works out to RO 118,000 for the first year of operation.

5.3.6 Sales Expenses

Total sales expenses for the project are estimated to be RO 39,000. Details are provided in annexure 2.6.

5.3.7 Depreciation

Depreciation for the project works out to RO 122,750 each for first ten years and is computed at following rates and is detailed in Annexure 2.7.

Pre-operative expenses are written off in the first year of operation.

	<u>Life (years)</u>
Building	20
Plant and Machinery	10
Vehicles & Int. transport etc.	4
Furniture	5
Contingency and escalation	10

5.3.8 Loan and interest calculation

Interest rate for term loan and working capital borrowing are taken at 6% and the details are given in Annexure 2.8.

5.4 WORKING RESULTS

The estimated sales realization of the project is as detailed in the table below.

Details		1	2	3	4	5	6	7	8	9	10
		RO '000									
1	Operating Cost	1,498	1,705	1,912	2,117	2,127	2,139	2,150	2,161	2,172	2,184
2	Total Sales	1,680	1,959	2,239	2,519	2,519	2,519	2,519	2,519	2,519	2,519
3	Profit before Int. & dep.	181	255	328	403	393	380	370	358	347	335
4	Depreciation	123	123	123	123	123	123	123	123	123	123
5	Finance Cost	66	64	56	49	41	34	27	19	13	13
6	Operating profit	-7	68	149	231	228	224	220	217	211	199
7	Other income if any	0	0	0	0	0	0	0	0	0	0
8	Prelim Exp. written off	99	-	-	-	-	-	-	-	-	-
9	Profit/Loss before tax	-106	68	149	231	228	224	220	217	211	199
10	Income Tax	0	10	22	35	34	34	33	32	32	30
11	Profit after tax	-106	58	126	196	194	190	187	184	179	169
12	Statutory reserve	0	6	13	20	19	19	19	18	18	17
13	Profit for appropriation	-106	52	114	177	175	171	169	166	161	152
14	Dividend	0	0	0	0	0	0	0	0	0	0
15	General reserve	-106	52	114	177	175	171	169	166	161	152
16	Net cash accruals	116	181	249	319	317	313	310	307	302	292

5.5 COST RATIOS

The major cost indicators as a percentage of sales realization are given in Annexure- 9.

Details		1	2	3	4	5
1	Raw Material / Total Sales	65.6%	65.6%	65.6%	65.6%	65.6%
2	Utilities / Total Sales	2.5%	2.5%	2.5%	2.5%	2.5%
3	Factory wages / Total Sales	7.3%	6.4%	5.8%	5.3%	5.4%
4	Prime Cost / Total Sales	75.4%	74.6%	73.9%	73.5%	73.6%
5	Factory exp. / Total Sales	2.9%	2.6%	2.4%	2.2%	2.2%
6	Factory Cost / Total Sales	78.3%	77.2%	76.4%	75.7%	75.9%
7	Admin exp. / Total Sales	7.0%	6.2%	5.6%	5.1%	5.3%
8	Selling exp. / Total Sales	3.9%	3.6%	3.4%	3.2%	3.3%
9	Finance Cost / Total Sales	3.9%	3.3%	2.5%	1.9%	1.6%
10	Non-Cash exp. / Total Sales	13.2%	6.3%	5.5%	4.9%	4.9%
11	Total Cost/ Sales	106.3%	96.5%	93.4%	90.8%	90.9%

5.6 KEY FINANCIAL INDICATORS

The Key Financial Indicators of the Integrated Project is as detailed in the table below:

Detail	Value
IRR on total investment	16.23%
IRR on Equity	23.46%
Payback period of Total Investment	6 years 2 Months
Payback period of Total Equity	6 years 1 Month
Break Even Capacity (as % of sales)	69.6%
Cash Break Even Capacity (as % of Sales)	55.8%
Debt Service Coverage Ratio	2.01

5.7 SENSITIVITY ANALYSIS

A sensitivity analysis was carried out for the following three parameters:

- a. Reduction in Volume 10%
- b. Increase in Raw material cost by 10%
- c. Reduction in Sales realization by 10%

The effect of these on the IRR (calculated for 10 years) is provided in the table.

Detail	Original value	Reduction in Volume 10%	Increase in Raw material cost by 10%	Reduction in Sales realization by 10%
IRR on Total Investment %	16.23	13.37	10.07	6.50
IRR on Total Equity %	23.46	18.52	13.31	7.81

6 CONCLUSIONS AND RECOMMENDATIONS

The project, based on various analyses and the indicated sales realization levels, is expected to have an IRR of 16.23% on the total investment and shall yield an IRR of 23.46% on the total equity.

The DSCR is around 2.01 and the project shall be able to repay the required debt effectively.

Thus based on the above analysis the proposed project is found to be technically feasible and financially viable.

ANNEXURE - FINANCIAL PROJECTIONS

ANNEXURE- 1				
HEAVY DUTY PE BAGS PROJECT				
ESTIMATED PROJECT COST				
S. No.	Item	Refer	Amount	Remarks
		Appendix	In RO	
A1	PROJECT COST			
1	Land Development for Plant Site	1.1	65,000	Estimates
2	Building etc.	1.2	368,000	Estimates
3	Plant & Machinery	1.3	856,000	Estimates & Offer
4	Vehicles and Int. Transport	1.4	39,000	Estimates
5	Furniture & Office Equip.	1.5	9,000	Estimates
6	Pre- Operative Expenses	1.6	99,000	Estimates
7	Contingency & Escalation	1.7	72,000	Estimates
	Sub Total		1,508,000	
A2	WORKING CAPITAL		320,000	
A3	TOTAL		1,828,000	
1	Equity		731,200	
2	Term Loan at 6% Interest Rate		872,800	
	Total		1,604,000	
3	Working Capital Loan from Commercial Bank		224,000	70% as WC Loan
	TOTAL CAPITAL		1,828,000	

ANNEXURE- 1.1						
HEAVY DUTY PE BAGS PROJECT						
ESTIMATED COST OF LAND & SITE DEVELOPMENT						
S.No.	Item	Unit	Q'ty	Rate	Amount	Remarks
				(R.O)	(R.O)	
A	LAND					
1	Land for Plant	Sq. M	10,000			Lease Rental
B	SITE DEVELOPMENT					
1	Soil Testing				4,000	Lumpsum
2	Fencing	M	400	30	12,000	Estimate
3	Paving /Roads	Sq. M	3,250	8	26,116	
4	Gate, Gate House & Misc.	Set			2,500	
5	Sewerage/Drainage				20,000	
6	Provision for Roads					
7	Provision for Electrical Lines					
8	Provision for Water Lines					
	Sub Total				64,616	
C	TOTAL				64,616	
	Say				65,000	

ANNEXURE- 1.2					
HEAVY DUTY PE BAGS PROJECT					
ESTIMATED COST OF BUILDING & CIVIL WORKS					
S.No.	Item	Area	Rate	Amount	Remarks
		(Sq. M)	RO	RO	
A	MAIN PLANT BUILDINGS				
1	Plant and Machinery	1,200	240	288,000	Including Hydrant Line with all Electro mechanical works
	Sub Total	1,200	240	288,000	
B	OTHER BUILDINGS				
1	Office Building	150	150	22,500	Estimates
2	Staff room/ Restroom/ Canteen and Stores	50	150	7,500	
3	Guard Room	10	150	1,500	
4	Covered Car Parking			4,000	
5	Workshop and Lab	100	150	15,000	
6	Products Warehouse	100	150	15,000	
7	Raw Materials Warehouse	1,000	0	0	Open Yard
	Sub Total	1,410		65,500	
C	ENGINEERING FEES				
1	Design			7,070	2% of above
2	Supervision			7,070	2% of above
	Sub Total			14,140	
D	TOTAL	2,610		367,640	
	Say			368,000	

ANNEXURE- 1.3						
HEAVY DUTY PE BAGS PROJECT						
ESTIMATED COST OF PLANT & MACHINERY						
S.No.	Item	Q'ty (Nos.)	Rate (RO)	Amount (USD)	Amount (R.O)	Remarks
A	MAIN PLANT & MACHINERY					
1	Complete set of Machineries includig Extruders, Die, Winders etc. including machine foundation and associated civil works			1,864,742	719,978	Estimates & Offer
	Sub total			1,864,742	719,978	Offer from Supplier
B	MATERIAL TESTING EQUIPMENT					
1	Complete set of requesite Testing Equipments			50,000	19,305	Estimates & Offer
	Sub Total			50,000	19,305	
C	AUXILLIARY MACHINERY					
1	Cooling Tower 15 Tr					
2	Chilling plants (water chiller 10 Tr & BRINE chiller 75 Tr)			60,000	23,166	Estimate
3	Compressor					
	Sub Total			60,000	23,166	
	Total Cost of Imported Items			1,974,742	762,449	
D	MECHANICAL WORKSHOP / SERVICES - Local					
1	Mechanical Workshop					
2	Electrical & Instrumentation - workshop				5,000	Estimates
3	Workshop Consumables					
	Sub Total				5,000	Sum B1 to B3
E	Electrification Works					
1	HV Supply, HV Panel and associdated equipment, etc.				15,000	
	Sub Total				15,000	
	Total				20,000	
F	AT SITE COST					
1	Total cost of Imported plant				762,449	Sum A + B + C + D
2	Spares - Import				15,249	2% of D1
3	Packing, Insurance Forwarding & Freight - Import				30,498	At 4% of D1
4	Clearing & Transport to Site				7,624	At 1% of D1
5	CIF cost of Imported Machinery				815,820	Sum of D1 to D4

ANNEXURE- 1.3

HEAVY DUTY PE BAGS PROJECT

ESTIMATED COST OF PLANT & MACHINERY

S.No.	Item	Q'ty (Nos.)	Rate (RO)	Amount (USD)	Amount (R.O)	Remarks
6	Total Cost of Local machinery				20,000	Sum B & C
7	Spares - Local				0	Included Above
8	Transportation cost				0	
9	Total Cost of Local machinery				20,000	Sum of D6 to D8
10	At Site Cost (Imported and Local)				835,820	Sum of D5 & D9
G	ERECTED COST					
1	At Site Cost				835,820	D10
2	Machine Foundation & Associated Civil Works				20,000	Lumpsum Estimate
3	Erection & Commissioning - Technical Supervision					
4	Erection & Commissioning -Accommodation, Food Etc.					
5	TOTAL COST				855,820	
	Say				856,000	

ANNEXURE- 1.4					
HEAVY DUTY PE BAGS PROJECT					
ESTIMATED COST OF VEHICLES & INTERNAL TRANSPORT					
S.No.	Item	Q'ty (Nos.)	Rate	Amount (R.O)	Remarks
A	VEHICLES				
1	Vehicle for Managers	3	9,000	27,000	
	Sub Total	3		27,000	
B	TRANSP. EQUIPMENT/Vehicle				
1	Fork lifts - 5 T	1	12,000	12,000	
	Sub Total	1		12,000	
	TOTAL	4		39,000	

ANNEXURE- 1.5					
HEAVY DUTY PE BAGS PROJECT					
ESTIMATED COST OF FURNITURE & OFFICE EQUIPMENT					
S.No.	Item	Q'ty	Rate	Amount	Remarks
				(R.O)	
A	Furniture & Fixtures				
1	Office Furniture			3,000	
2	Factory & Canteen Furniture			1,000	
3	Accommodation - GM				Included as Part of Allowance
4	Accommodation - Staff				Included as Part of Allowance
	Sub total			4,000	
B	Office Equipment				
1	Printer	3	50	150	
2	Computer	4	300	1,200	
3	Photocopier	1	1,000	1,000	
4	Fax, telephone etc	0	70	-	
5	Meeting Room	1	500	500	
6	Other Office equipment			1,000	
7	Miscellaneous items			1,500	
	Sub total			5,350	
	TOTAL			9,350	
				9,000	

ANNEXURE- 1.6				
HEAVY DUTY PE BAGS PROJECT				
ESTIMATED COST OF PRE-OPERATIVE EXPENSES				
S.No	Item	(R.O)	Amount (R.O)	Remarks
1	Preliminary Expenses		1,000	Up to formation of Co.
2	Feasibility Studies		6,000	
3	Project Management Expenses		-	Included in Firm Offer for Building and Civil Works
4	Company Employees			
a	Salary & benefits - Production	2,240		2 Months
b	Salary & benefits - Admin	3,010		1 Month
c	Visa, Passage etc.	17,100		For Expatriates from RO 900 to RO 2500 per person as per designation
	Sub Total		22,350	
5	Financing Cost			
a	Institutional Loan Interest	39,276		At 3% for 9 months
b	Mortgage Expenses	8,728		At 1% on Institu: Loan
c	Other Bank Charges	1,000		Lumpsum
	Sub Total		49,004	
6	Communication		600	R.O 100/M for 6 Months
7	Travel		1,000	Lumpsum
8	Recruitment Charges		3,750	RO 250 per expat employee
9	Audit Fees, Legal Fees		1,500	Lumpsum
10	Insurance		2,448	At 0.2 % of Plant & Bldg.
11	Start Up Expenses		6,214	2 Days of RM and Utility Charges
12	Product Launching, Advt. etc.		3,000	Provision
13	Miscellaneous		2,000	Provision
	Total		98,866	
	Say..		99,000	

ANNEXURE- 1.7					
HEAVY DUTY PE BAGS PROJECT					
ESTIMATES OF CONTINGENCY AND ESCALATION					
S. No.	Item	Cost (R.O)	Rate (%)	Provision (R.O)	Remarks
A	FIXED ASSETS				
1	Land for Plant Site	65,000	5.0	3,250	
2	Building etc.	368,000	5.0	18,400	
3	Plant & Machinery	856,000	5.0	42,800	
4	Vehicles and Int. Transport	39,000	5.0	1,950	
5	Furniture & Office Equip.	9,000	5.0	450	
6	Pre- Operative Expenses	99,000	5.0	4,950	
	TOTAL			71,800	
				72,000	say

ANNEXURE- 1.8

HEAVY DUTY PE BAGS PROJECT

ESTIMATES OF WORKING CAPITAL REQUIREMENTS

S.No.	Item	Req.		1	2	3	4	Remarks
				In RO '000				
1	Acct. Receivable	60	Days	257	291	324	356	Cost of sales - Non C Ex.
2	Raw Materials	45	Days	135	157	179	202	
3	Consumables & Packing	1	Month	1	1	1	1	
4	Utilities	1	Month	4	4	5	5	
5	Factory Wages	1	Month	10	10	11	11	
6	Other Operatng cost	1	Month	0	0	0	0	
7	Admin Expenses	1	Month	10	10	10	11	
8	Sales Expenses	1	Month	7	8	9	10	
9	Work in Progress	3	Day	11	12	14	16	At Factory Cost
10	Finished Goods	0.5	Month	62	71	79	87	At total Cost-Non cash-Selling and Distribution
11	Finance Cost	1	Month	5	5	5	4	At Finance Cost
12	Total			502	570	637	703	
13	Payables							
	Raw Materials	2	Month	182	212	243	273	
	Subtotal			182	212	243	273	
	Total Working capital			320	358	394	430	

ANNEXURE- 2
HEAVY DUTY PE BAGS PROJECT
COST OF SALE

S.No	Year of Operation	Amount In RO '000										Remarks
		1	2	3	4	5	6	7	8	9	10	
	Capacity Utilisation	60%	70%	80%	90%	90%	90%	90%	90%	90%	90%	
1	Raw Materials	1,091	1,273	1,455	1,637	1,637	1,637	1,637	1,637	1,637	1,637	
2	Packing Materials	11	13	15	16	16	16	16	16	16	16	@ 1% of RM Cost
3	Utilities	43	50	57	64	64	64	64	64	64	64	
4	Factory Wages	122	125	129	133	137	141	145	150	154	159	
	PRIME COST	1,267	1,461	1,656	1,851	1,855	1,859	1,863	1,867	1,872	1,876	Sub total of 1 to 4
5	Rent for land	10	10	10	10	10	12	12	12	12	12	RO 1 per Sq. M / Year
6	Factory Overheads	13	15	17	17	17	17	17	17	17	17	
7	Misc. Factory Exp	26	27	28	28	29	30	31	32	33	34	
8	FACTORY COST	1,315	1,513	1,711	1,906	1,911	1,917	1,923	1,928	1,933	1,939	Sub total of 6 to 8
9	Admin. Salaries	109	112	116	119	123	127	130	134	138	142	
10	Admin. Expenses	9	9	10	10	11	11	12	12	13	14	
11	Total Admin Exp	118	122	126	130	134	138	142	147	151	156	Sum (10) & (11)
12	Sales Salaries	39	41	42	43	44	46	47	49	50	52	
13	Advert.& Bss Promotion	25	29	34	38	38	38	38	38	38	38	At 1.5% of local Sales
14	Total sales & dist: costs	65	70	75	81	82	84	85	86	88	89	Sum of (13 & 14)
15	OPERATING COST	1,498	1,705	1,912	2,117	2,127	2,139	2,150	2,161	2,172	2,184	Sum (9)+(12)+(15)
	Finance cost											
16	Int on Institutional finance	52	50	43	36	28	21	13	6	0	0	
17	Int on working capital	13	13	13	13	13	13	13	13	13	13	
18	Total finance cost	66	64	56	49	41	34	27	19	13	13	Sum (17)+(18)
	Non cash expenses											
19	Depreciation	123	123	123	123	123	123	123	123	123	123	
20	Prelim Expenses written off	99	0	0	0	0	0	0	0	0	0	
21	COST OF SALE	1,786	1,891	2,091	2,288	2,291	2,296	2,299	2,303	2,309	2,321	Sum 16+19+20+21

ANNEXURE- 2.1							
HEAVY DUTY PE BAGS PROJECT							
ESTIMATED COST OF RAW MATERIAL							
S. No	Particulars	Unit	Quantity	Rate		Amount	Remarks
				USD	RO		
A	RAW MATERIALS						
1	LDPE / HDPE / LLDPE	Ton	3,180	1,350	521.24	1,657,594	Rates at Heavy Duty PE Bags Project Site (based on S&P GLOBAL PLATTS PETROCHEMICAL INDEX (PGPI))
2	Additives + Printing Inks	Ton	167	2,500	965.25	161,559	
	Total		3,348			1,819,153	

ANNEXURE- 2.2						
HEAVY DUTY PE BAGS PROJECT						
ESTIMATED COST OF UTILITIES						
S.No.	Item	Unit	Qty	Rate	Amount	Remarks
					(R.O)	
A	Utilities					
1	Electricity	KWH	2,188,800	0.03	65,664	
3	Water	Cu. M	6,917	0.77	5,326	
	Grand Total				70,990	

ANNEXURE- 2.3							
HEAVY DUTY PE BAGS PROJECT							
ESTIMATES OF ANNUAL SALARIES AND WAGES							
S. No.	Item	No of		Salary		Amount (R.O)	Remarks
		Personnel		(R.O)			
A	PRODUCTION & MAINTENANCE	Omanis	Expat	Omanis	Expat		
1	Production Manager	0	1	0	1000	12,000	
2	Production Supervisors	0	1	0	800	9,600	
3	Quality Control Supervisor	0	1	0	800	9,600	
4	Skilled Technicians	0	2	0	500	12,000	
5	Semi Skilled Technicians	0	2	0	250	6,000	
6	Un Skilled Technicians	1	1	300	150	5,400	
7	Maintenance Supervisor	0	1	0	800	9,600	
8	Electrical / Mechanical Tehnicians	1	1	600	500	13,200	
9	Maintenance Assistants	1	1	450	350	9,600	
	Sub Total	3	11			87,000	
	Total Manpower Cost - Production						
	Total					87,000	
	Other Benefits @40% over and above Basic Salary					34,800	
	Total Cost					121,800	
B	ADMINISTRATION & ACCOUNTS						
1	General Manager		1		1500	18,000	
2	Accountant		1		800	9,600	
3	Logistics Officer	1		650		7,800	
4	Storekeeper	1		500		6,000	
5	P.R.O.	1		600		7,200	
6	Office Boy/ Messenger	2		325		7,800	
7	Drivers	1		400		4,800	
8	Security Guards	4		350	200	16,800	
	Sub Total	10	2			78,000	
	Total Manpower Cost - Admin & Accounts						
	Total Salary					78,000	
	Other Benefits @40% over and above Basic Salary					31,200	
	Total Cost					109,200	
C	SALES						
1	Marketing Manager		1		1000	12,000	
2	Sales Executive	1	1	750	600	16,200	
	Sub Total	1	2			28,200	
	Total Manpower Cost - Sales						
	Total Salary					28,200	
	Other Benefits @40% over and above Basic Salary					11,280	
	Total Cost					39,480	
D	GRAND TOTAL	14	15			270,480	
	Omanisation Ratio	48%					

ANNEXURE- 2.4					
HEAVY DUTY PE BAGS PROJECT					
ESTIMATES OF ANNUAL FACTORY EXPENSES					
S.No.	Item	Year	Year	Year	Remarks
		1	2	3	
1	Repairs & Maintenance	4,280	6,420	8,560	At 0.5 , 1.5% & 2% of erected cost of P & M
2	Civil Repairs	920	920	920	At 0.25 % of cost of Building and Civil Works
3	Spare Parts	152	229	305	At 1%, 1.5% and 2% of 'at-site' cost of P & M
4	Insurance	6,120	6,120	6,120	At 0.5 % of cost Building, Plant and Machinery
5	Forklift	1,200	1,200	1,200	RO 100/month
	TOTAL	12,672	14,889	17,105	

ANNEXURE- 2.5				
HEAVY DUTY PE BAGS PROJECT				
ESTIMATES OF ANNUAL ADMINISTRATIVE EXPENSES				
S.No.	Item	Amount		Remarks
		(R.O)		
1	Salaries & Benefits		109,200	Annexure 2.1
2	Rent-Accommodation & food			Included in Allowance
3	Telephone, Fax, internet etc.		1,200	At RO 100 /Month
4	Vehicle Expenses & Petrol			
a	Car	1,800		RO 50 per month
	Sub Total		1,800	
5	Stationery, Postage etc.		600	At R.O 50/Month
6	Trade license/government fee		2,000	Lumpsum
7	Travel & Recruitment		1,000	Lumpsum
8	Legal, Audit Fees		1,200	Lumpsum
9	Insurance		450	
10	Miscellaneous		1,000	At 5 % of above
	Grand Total		118,000	

ANNEXURE- 2.6				
HEAVY DUTY PE BAGS PROJECT				
ESTIMATES OF ANNUAL SALES EXPENSES				
S.No.	Item		Amount	Remarks
		(R.O)	(R.O)	
	SALES			
1	Salaries		39,480	See Annexure 2.3
2	Advertisement			Provided Separately in Cost of sales
3	Business Promotion			Provided Separately in Cost of sales
	Sub Total		39,480	
	Total		39,000	

ANNEXURE- 2.7						
HEAVY DUTY PE BAGS PROJECT						
DEPRECIATION CALCULATIONS						
S. No	Item	Cost	Rate	S.V.	Amount	Renewals
			(%)	(R.O)	(R.O)	
A	FIXED ASSETS					
1	Land for Plant Site	65,000	0	0	-	Nil
2	Building etc.	368,000	5	184000	18,400	Nil
3	Plant & Machinery	856,000	10	0	85,600	Year 11
4	Vehicles and Int. Transp.	39,000	25	19500	9,750	Years 5, 9
5	Furniture & Office Equip.	9,000	20	0	1,800	Years 6, 11
6	Contingency & Escalation	72,000	10	0	7,200	Nil
7	Sub Total	1,409,000		203500	122,750	
B	PRELIM &PRE OPE: EXP	99000	100	0	99,000	Nil
C	WORKING CAPITAL					
1	Working Capital	430028	0	430028	-	
D	TOTAL			633,528	221,750	
	Less Balance Loan			224,000		
E	SALVAGE VALUE			409,528		
	Note: S.V. = Salvage Value at the end of 10th year.					

ANNEXURE- 2.8									
HEAVY DUTY PE BAGS PROJECT									
LOAN & INTEREST CALCULATIONS									
No	Term Loan at 6% Interest Rate				WC Loan		Interest		Rep
	Year	Prn	Int	Rep	Prn	Int	TL	WC	
	7		6.0%			6%			
1		873	26.2		224	6.7			
2	1	873	26.2		224	6.7	52.4	13.4	0
3		873	26.2	62	224	6.7			
4	2	810	24.3	62	224	6.7	50.5	13.4	125
5		748	22.4	62	224	6.7			
6	3	686	20.6	62	224	6.7	43.0	13.4	125
7		623	18.7	62	224	6.7			
8	4	561	16.8	62	224	6.7	35.5	13.4	125
9		499	15.0	62	224	6.7			
10	5	436	13.1	62	224	6.7	28.1	13.4	125
11		374	11.2	62	224	6.7			
12	6	312	9.4	62	224	6.7	20.6	13.4	125
13		249	7.5	62	224	6.7			
14	7	187	5.6	62	224	6.7	13.1	13.4	125
15		125	3.7	62	224	6.7			
16	8	62	1.9	62	224	6.7	5.6	13.4	125
17		0	0.0		224	6.7			
18	9	0	0.0		224	6.7	0.0	13.4	0
19		0	0.0		224	6.7			
20	10	0	0.0		224	6.7	0.0	13.4	0

ANNEXURE- 4

HEAVY DUTY PE BAGS PROJECT

PROJECTED CASH FLOW STATEMENT

Year of Operation		0	1	2	3	4	5	6	7	8	9	10	Remarks
No	Item	In R.O'000											
A	CASH INFLOW												
1	Equity	731	0	0	0	0	0	0	0	0	0	0	
2	Profit before Tax & Interest	0	-40	132	205	280	270	258	247	236	224	212	
3	Depreciation	0	123	123	123	123	123	123	123	123	123	123	
4	Preliminary expenses written off	0	99	0	0	0	0	0	0	0	0	0	
5	Increase in Other term loan	873	0	0	0	0	0	0	0	0	0	0	
6	Increase in Institutional Loan		0	0	0	0	0	0	0	0	0	0	
7	Increase in W C loan	224	0	0	0	0	0	0	0	0	0	0	
8	Other income												
9	Sub Total	1,828	181	255	328	403	393	380	370	358	347	335	Sum of A1 to A8
B	CASH OUTFLOW												
1	Capital Project expenditure	1,409	0	0	0	0	39	9	0	0	39	0	
2	Other normal cap exp	99	0	0	0	0	0						
3	Increase in Working Cap:	320		38	36	36	0	0	0	0	0	0	
4	Decrease in Institutional Loan	0	0	125	125	125	125	125	125	125	0	0	
5	Decrease in Other term loan		0	0	0	0	0	0	0	0	0	0	
6	Interest on term loans		52	50	43	36	28	21	13	6	0	0	
7	Interest on work cap loan	0	13	13	13	13	13	13	13	13	13	13	
8	Income Tax	0	0	10	22	35	34	34	33	32	32	30	
9	Dividend	0	0	0	0	0	0	0	0	0	0	0	Provision
10	Sub Total	1,828	66	237	240	244	239	201	184	176	84	43	Sum of B1 to B9
	OPENING BALANCE	0	0	116	134	222	381	534	713	898	1,081	1,343	
C	SURPLUS	0	116	18	88	159	153	179	185	182	263	292	Difference(A9)-(B10)
D	CLOSING BALANCE	0	116	134	222	381	534	713	898	1,081	1,343	1,635	

ANNEXURE- 5

HEAVY DUTY PE BAGS PROJECT

INTERNAL RATE OF RETURN ON TOTAL CAPITAL

No	Year of Operation	0	1	2	3	4	5	6	7	8	9	10	Remarks
	Item	In R.O'000											
A	CASH INFLOW												
1	Net Profit bef. Tax	0	-106	68	149	231	228	224	220	217	211	199	Refer Annexure - 3
2	Depreciation	0	123	123	123	123	123	123	123	123	123	123	Ref Annexure 2.7
3	Prelim Exp written off		99	0	0	0	0	0	0	0	0	0	Ref Annexure 2.7
4	Finance Cost	0	66	64	56	49	41	34	27	19	13	13	Ref Annexure 2.8
5	Salvage Value		0	0	0	0	0	0	0	0	0	2260	Ref Annexure 2.7
6	Sub Total	0	181	255	328	403	393	380	370	358	347	2,595	Sum of A1 to A5
B	CASH OUTFLOW												
1	Capital Project expenditure	1409	0	0	0	0	39	9	0	0	39	0	Refer Annexure - 1
2	Other normal cap exp	99	0	0	0	0	0	0	0	0	0	0	Refer Annexure - 1
3	Working Capital	320	0	38	36	36	0	0	0	0	0	0	Refer Annexure - 1
4	Income Tax		0	0	10	22	35	34	34	33	32	32	Refer Annexure - 3.2
5	Sub Total	1828	0	38	46	58	74	43	34	33	71	32	Sum of B1 to B4
C	NET CASHFLOW (AT)	(1,828)	181	217	281	345	319	337	336	325	275	2,563	
D	NET CASH FLOW(PT)	(1,828)	181	217	292	367	354	371	370	358	308	2,595	
E	INTERNAL RATE OF RETURN ON TOTAL INVESTMENT							16.23%					

ANNEXURE- 6

HEAVY DUTY PE BAGS PROJECT

INTERNAL RATE OF RETURN ON EQUITY CAPITAL (AFTER TAX)

No	Year of Operation	0	1	2	3	4	5	6	7	8	9	10	Remarks
	Item	In R.O'000											
A	CASH INFLOW												
1	Net Profit before Tax	0	-106	68	149	231	228	224	220	217	211	199	Refer Annexure- 3
2	Depreciation	0	123	123	123	123	123	123	123	123	123	123	Refer Annexure - 2.7
3	Prelim Exp written off	0	99	0	0	0	0	0	0	0	0	0	Refer Annexure - 2.7
4	Salvage Value	0	0	0	0	0	0	0	0	0	0	2,260	Refer Annexure - 2.7
5	Sub Total	0	116	191	271	354	351	346	343	339	333	2,581	Sum of A1 to A4
B	CASH OUTFLOW												
1	Equity	731	0	0	0	0	0	0	0	0	0	0	Refer Annexure - 1
2	Fixed Assets	0	0	0	0	39	9	0	0	39	0	0	Refer Annexure - 1
3	Working Capital	0	38	36	36	0	0	0	0	0	0	0	Refer Annexure - 1
4	Loan Installment	0	0	125	125	125	125	125	125	125	0	0	Refer Annexure - 2.8
5	Income Tax	0	0	10	22	35	34	34	33	32	32	30	Refer Annexure - 3.1
6	Sub Total	731	38	171	183	198	168	158	158	196	32	30	Sum of A1 to A5
C	NET CASHFLOW	-731	78	20	89	155	183	188	185	143	302	2,551	
D	INTERNAL RATE OF RETURN ON EQUITY INVESTMENT							23.46%					

ANNEXURE- 7

HEAVY DUTY PE BAGS PROJECT

PROJECTED BALANCE SHEET

No	Year of Operation	0	1	2	3	4	5	6	7	8	9	10	Remarks
	Item	In R.O'000											
A	ASSETS EMPLOYED												
1	Fixed Assets												
a	Gross Fixed Assets	1409	1409	1409	1409	1409	1448	1457	1457	1457	1496	1496	Refer Annexure - 2.7
b	Preliminary expenses	99	0		0	0	0	0	0	0	0	0	Refer Annexure- 2.7
c	Acc. Depreciation	0	123	246	368	491	614	737	859	982	1,105	1,228	Refer Annexure - 2.7
d	Net Fixed Assets	1,508	1,286	1,164	1,041	918	834	721	598	475	391	269	
2	Current Assets												
a	Cash	0	116	134	222	381	534	713	898	1081	1343	1635	Refer Annexure - 4
b	Other Cur. Assets	502	533	601	667	703	703	703	703	703	703	703	Refer Annexure - 1.7
c	Total Cur. Assets	502	648	734	889	1,084	1,237	1,416	1,601	1,783	2,046	2,338	
3	Less: Cur. Liabilities	182	212	243	273	273	273	273	273	273	273	273	
	Total	1,828	1,722	1,655	1,657	1,729	1,798	1,864	1,926	1,986	2,165	2,334	
B	FINANCED BY												
1	Equity	731	731	731	731	731	731	731	731	731	731	731	Refer Annexure - 1
2	Statutory reserve	0	0	6	18	38	57	76	95	114	132	148	
3	General reserves	0	-106	-54	60	236	411	582	751	916	1077	1229	Cu.NP-Cu.Divident
4	Institutional Finance	873	873	748	623	499	374	249	125	0	0	0	Refer Annexure - 2.8
5	Bank Borrowings	224	224	224	224	224	224	224	224	224	224	224	Refer Annexure - 2.8
	Total	1,828	1,722	1,655	1,657	1,728	1,798	1,863	1,926	1,985	2,164	2,333	

ANNEXURE- 8

HEAVY DUTY PE BAGS PROJECT

RATIO ANALYSIS

S. No	Years of Operation	1	2	3	4	5	6	7	8	9	10
A	COST RATIOS										
1	Raw Material / Total Sales	65.6%	65.6%	65.6%	65.6%	65.6%	65.6%	65.6%	65.6%	65.6%	65.6%
2	Utilities / Total Sales	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
3	Factory wages / Total Sales	7.3%	6.4%	5.8%	5.3%	5.4%	5.6%	5.8%	5.9%	6.1%	6.3%
4	Prime Cost / Total Sales	75.4%	74.6%	73.9%	73.5%	73.6%	73.8%	73.9%	74.1%	74.3%	74.5%
5	Factory exp. / Total Sales	2.9%	2.6%	2.4%	2.2%	2.2%	2.3%	2.4%	2.4%	2.4%	2.5%
6	Factory Cost / Total Sales	78.3%	77.2%	76.4%	75.7%	75.9%	76.1%	76.3%	76.5%	76.7%	77.0%
7	Administrative exp. / Total Sales	7.0%	6.2%	5.6%	5.1%	5.3%	5.5%	5.6%	5.8%	6.0%	6.2%
8	Selling exp. / Total Sales	3.9%	3.6%	3.4%	3.2%	3.3%	3.3%	3.4%	3.4%	3.5%	3.5%
9	Finance Cost / Total Sales	3.9%	3.3%	2.5%	1.9%	1.6%	1.4%	1.1%	0.8%	0.5%	0.5%
10	Non-Cash exp. / Total Sales	13.2%	6.3%	5.5%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%
11	Total Cost / Sales	106.3%	96.5%	93.4%	90.8%	90.9%	91.1%	91.3%	91.4%	91.6%	92.1%
B	PROFITABILITY RATIOS										
1	PBDIT / Sales	10.8%	13.0%	14.6%	16.0%	15.6%	15.1%	14.7%	14.2%	13.8%	13.3%
2	Operating profit / Sales	-0.4%	3.5%	6.6%	9.2%	9.1%	8.9%	8.7%	8.6%	8.4%	7.9%
3	PAT / Sales	-6.3%	3.0%	5.6%	7.8%	7.7%	7.5%	7.4%	7.3%	7.1%	6.7%
4	PAT / Investment	-58.5%	22.7%	38.5%	48.8%	49.4%	50.0%	50.7%	51.4%	51.6%	50.4%

ANNEXURE- 9				
HEAVY DUTY PE BAGS PROJECT				
BREAK EVEN ANALYSIS				
S. No	Item	Year 1	Year 6	Remarks
		In R.O '000		
A	FIXED COST			
1	Production Wages	122	141	Refer Annexure - 2
2	Factory Overheads	23	29	Refer Annexure - 2
3	Misc. Factory Exp.	26	30	Refer Annexure - 2
4	Admin. Expenses	118	138	Refer Annexure - 2
5	Sales Expenses	65	84	Refer Annexure - 2
6	Depreciation	123	123	Refer Annexure - 2
7	Prelim. Expenses written off	99	0	Refer Annexure - 2
8	Financing Cost	66	41	Refer Annexure - 2
9	Income Tax	0	34	Refer Annexure - 2
	Sub Total	641	620	
B	VARIABLE COST			
1	Raw materials	1,102	1,654	Refer Annexure - 2
2	Utilities	43	64	Refer Annexure - 2
3	Misc. Expenses	0	0	
	Sub Total	1,145	1,718	
C	SALES	1,680	2,519	Refer Annexure - 3
D	CONTRIBUTION	535	802	Difference C - B
E	BREAK EVEN POINT	72%	69.6	As % of Production
F	CASH BEP	47.0	55.8	As % of Production

ANNEXURE- 10					
HEAVY DUTY PE BAGS PROJECT					
SENSITIVITY ANALYSIS (IRR FOR 10 YEARS)					
S. No.	Item	Projection	Change in One		
		No Change	Variable at a Time		
A	VARIABLE	Original	Reduction in Volume	Increase in RM Cost	Reduction in Sales Realization
				Cost	Value
B	PESSIMISTIC				
	Change		10%	10%	10%
C	OPTIMISTIC				
	Change		10%	10%	10%
D	IRR - PESSIMISTIC PROJECTION				
1	IRR on Investment	16.23	13.37	10.07	6.50
2	IRR on Equity	23.46	18.52	13.31	7.81
E	IRR - OPTIMISTIC PROJECTION				
1	IRR on Investment	16.23	19.0	21.8	24.7
2	IRR on Equity	23.46	28.3	33.2	38.2

