

# Pre-Feasibility Study

## (Injection Molding Plastic Products)



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**Ministry of Industries & Production**  
**Government of Pakistan**

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*Note: All SMEDA Services / information related to PM's Youth Business Loan are Free of Cost*

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## 1. DISCLAIMER

This information memorandum is to introduce the subject matter and provide a general idea and information on the subject. Although, the material included in this document is based on data / information gathered from various reliable sources; however, it is based upon certain assumptions which may differ from case to case. The information has been provided on “as is where is” basis without any warranties or assertions as to the correctness or soundness thereof. Although, due care and diligence has been exercised to compile this document, the contained information may vary due to any change in any of the concerned factors, and the actual results may differ substantially from the presented information. SMEDA, its employees or agents do not assume any liability for any financial or other loss resulting from this memorandum in consequence of undertaking this activity. The contained information does not preclude any further professional advice. The prospective user of this memorandum is encouraged to carry out additional diligence and gather any information which is necessary for making an informed decision including taking professional advice from a qualified consultant / technical expert before taking any decision to act upon the information.

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SMEDA

## 2. PURPOSE OF THE DOCUMENT

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document / study covers various aspects of project concept development, start-up, production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in **Injection Molding Plastic Products** business by providing them with a general understanding of the business with the intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error, and certain industrial norms that become a guiding source regarding various aspects of business set-up and its successful management.

Apart from carefully studying the whole document one must consider critical aspects provided later on, which form the basis of any investment decision.

## 3. INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs" , SMEDA has carried out 'sectoral research' to identify policy, access to finance, business development services, strategic initiatives, institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a hallmark of SME facilitation by SMEDA.

Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need based capacity building programs of different types in addition to business guidance through help desk services.

## 4. INTRODUCTION TO SCHEME

'Prime Minister's Youth Business Loan' Scheme, for young entrepreneurs, with an allocated budget of Rs. 5.0 Billion for the year 2013-14, is designed to provide subsidised financing at 8% mark-up per annum for one hundred thousand (100,000) beneficiaries, through designated financial institutions, initially through National Bank of Pakistan (NBP) and First Women Bank Ltd. (FWBL).

Loans from Rs. 0.1 million to Rs. 2.0 million with tenure up to 8 years inclusive of 1 year grace period and a debt : equity of 90 : 10 will be disbursed to SME beneficiaries across Pakistan, covering; Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan, Gilgit Baltistan, Azad Jammu & Kashmir and Federally Administered Tribal Areas (FATA).

## 5. EXECUTIVE SUMMARY

The Injection Molding Plastic Products Unit is proposed to be established as a contract manufacturing facility at a location where utilities especially electricity, infrastructure and other provisions essential for the production process are conveniently available. All industrial zones in cities like Karachi, Lasbela, Hyderabad, Lahore, Gujranwala, Multan, Rawalpindi, Quetta, Peshawar etc. are suitable locations to setup the project. The proposed project is assumed to manufacture plastic containers using injection grade HDPE / Co - PP plastic in a contract manufacturing mode.

The injection molding setup would have an installed capacity to manufacture 187,200 units of 500 grams plastic containers. However, the plant is estimated to manufacture 149,760 containers operating at 80% capacity. 12 personnel would be required to manage the operations of the plastic injection molding setup.

Total cost estimates are **Rs. 2.18 million** with a fixed investment of **Rs. 1.84 million** and an initial working capital requirement of **Rs. 0.34 million**.

Given the cost assumptions IRR and payback are **49%** and **2.25 years** respectively.

The most critical considerations or factors for success of the project are

1. Selection of appropriate plant and equipment / molds
2. Relevant Management Experience
3. Power / Energy Mix
4. Marketing Efficiency

## 6. BRIEF DESCRIPTION OF PROJECT AND PRODUCT

Plastic is a common name for polymers that are materials made of long strings of carbon and other elements. There are many different types of plastic, depending on the starting monomer selected, the length of polymer chains, and the type of modifying compounds added. The varied use of plastic in our everyday life has made it an integral component in almost everything. Plastic is used in everyday items like ballpoint pen, buckets, containers, glasses, water pipes, plastic bags to items of engineering excellence like cars and airplanes. The per capita consumption of plastic in Pakistan is 3.1 kg, while it is 3.3 kg in India and 7 kg in China. The highest per capita consumption of plastic is in United States and Germany, where per capita consumption is 120 kg per annum. Globally, the per capita plastic consumption works out to be around 24 kg per annum. There are around 6,000 plastic manufacturers in the Pakistan and 600,000 people are directly or indirectly engaged in this business.

The injection molding business is assumed to operate as a sole proprietorship, however, partnership opportunities may be explored if further investment is required.

- **Technology:** The proposed facility is to be setup with used plastic injection molding machine including molds for production of 500 grams plastic containers.
- **Location:** The unit is proposed to be established as a manufacturing facility at a location where utilities, infrastructure and other provisions essential for the production process are conveniently available such as industrial zones in Karachi, Hub, Hyderabad, Lahore, Gujranwala, Multan, Rawalpindi and Peshawar etc.
- **Product:** The project is assumed to manufacture food grade and other plastic containers using injection grade HDPE / Co - PP plastic in a contract manufacturing mode operating 20 hours a day, 312 days a year. The setup would have an installed capacity to manufacture 187,200 units of 500 grams plastic containers per annum.
- **Target Market:** Karachi, Hub, Hyderabad, Lahore, Gujranwala, Multan, Sialkot, Faisalabad, Gujrat, Rawalpindi, Quetta and Peshawar etc. are good markets for the product under consideration.
- **Employment Generation:** The proposed project will provide direct employment to 12 people.



## 7. CRITICAL FACTORS

The main critical success factors that affect the decision to invest in the proposed business setup are:

- Selection of appropriate plant and equipment / molds
- Relevant Management Experience
- Power / Energy Mix
- Marketing Efficiency
- Linkages

## 8. INSTALLED AND OPERATIONAL CAPACITIES

The proposed injection molding plastic products setup is envisaged to be established as a manufacturing facility. The setup would have an installed capacity to manufacture 187,200 units of 500 grams plastic containers per annum. However the plant is estimated to manufacture 149,760 containers operating at an 80% capacity. Sales are expected to increase at a rate of 10% annually with the same installed capacity.

## 9. GEOGRAPHICAL POTENTIAL FOR INVESTMENT

For the success of the project, it is important to find a location preferably in an industrial clusters where utilities especially electricity and other infrastructure are conveniently available. All industrial clusters in Karachi, Hub / Lasbela, Hyderabad, Lahore, Gujranwala, Multan, Rawalpindi, Quetta and Peshawar etc. are suitable to house the project. Establishing the unit in large cities would have an advantage of being close to large buyers, which may lead to consistent orders and referrals.

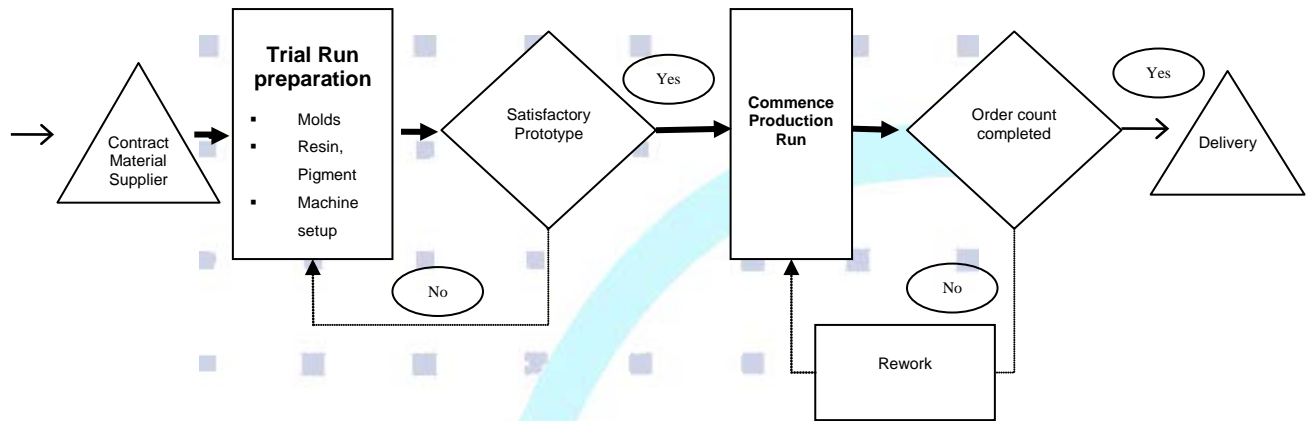
## 10. POTENTIAL TARGET MARKETS / CITIES

The plastic and packaging sectors are growing industrial segments in Pakistan relying heavily on the changing lifestyle patterns and population growth in the country. Major target market includes food processing and marketing companies, chemical, lubricant and pharmaceutical sector stakeholders based in Karachi and Lahore. However, there is also a growing demand for the product in, Hyderabad, Sukkur, Shikarpur, Gujranwala, Multan, Rawalpindi, Quetta and Peshawar etc.

## 11. PRODUCTION PROCESS FLOW

The production process diagram of the proposed injection molding plastic products setup is as follows.

### Injection Molding Process Flow



## 12. PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of this project under the 'Prime Minister's Youth Business Loan' Scheme. Various costs and revenue related assumptions along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are attached as appendices.

### 12.1 Project Economics

The following table shows internal rate of return, payback period and NPV for injection molding plastic products project operating at 80% of capacity in its first year of operations.

**Table 1 - Project Economics**

Description	Details
Internal Rate of Return (IRR)	49%
Payback Period (yrs)	2 .25
Net Present Value (NPV)	Rs 4,683,191



Returns on the project and its profitability are highly dependent on the power mix, relevant management experience, marketing efficiency and quality of molds.

## 12.2 Project Financing

Following table provides details of the equity required and variables related to bank loan;

**Table 2 - Project Financing**

Description	Details
Total Equity (10%)	Rs. 217,760
Bank Loan (90 %.)	Rs.1,959,840
Markup to the Borrower (%age/annum)	8%
Tenure of the Loan (Years)	8
Grace Period (Years)	1

## 12.3 Project Cost

Following requirements have been identified for operations of the proposed business.

**Table 3: Capital Investment for the Project**

Capital Investment	Amount (Rs.)
Renovation Cost	205,000
Furniture & Fixtures	189,000
Machinery & Equipment	1,200,000
Advance Rent and Security Deposit	196,800
Preliminary Expenses	50,000
<b>Total Capital Cost</b>	<b>1,840,800</b>
Initial Working Capital	336,800
<b>Total Project Cost</b>	<b>2,177,600</b>

## 12.4 Space Requirement

The land requirement is around 2,050 sq feet in an industrial area where all utilities and facilities are properly available. The plot will easily allow the accommodation of the recommended machines. The recommended space is proposed to be totally

covered with 30% space for warehouse, around 12% for office and tool shop and rest 58% to be utilized for production.

The allocation of space would be as follows:

**Table 4: Space Requirement**

Space Requirement (in ft.)	Area (Sqft.)	Cost of Renovation Amount (Rs.)
Production Hall	1,200	120,000
Office and tool shop	250	25,000
Warehouse	600	60,000
<b>Total Area</b>	<b>2,050</b>	<b>205,000</b>

The proposed premises would be acquired on a rental basis with 3 months deposit and 3 months advance rent after which rent will be payable on monthly basis. The monthly rent is estimated at approximately Rs. 16/ Sq. feet amounting to Rs. 32,800 per month for the proposed injection molding setup (2,050 Sq Ft.)

The premises renovation and customization costs of Rs. 205,000/- would be depreciated at the rate of 10% per annum using diminishing balance method.

## 12.5 Machinery and Equipment

The typical injection molding plastic products setup would require the following machinery and molds for its operations:

**Table 5: List of Machinery and Equipment**

Description	Quantity	Cost Rs/unit	Total Rs.
Used Injection Molding Machine (Year 1990-1996)	1	900,000	900,000
Used Molds (plastic container 500gms)			300,000
<b>Total Cost of Machinery</b>			<b>1,200,000</b>

The injection molding machine is available in Pakistan with local suppliers dealing in used / refurbished machinery. However, since the life of this machinery is very long (15 to 20 years) many people prefer using used machinery which requires a

regular maintenance but the capital investment is significantly lower than new machines. These machines usually come in two technological formats

- 1) Computerized
- 2) Analog

The most common brands for injection molding machinery are Jet Master, Super Jet, Mitsubishi, BM Biraghi, Engel, Horizon, Sintesi etc. A used analog injection molding machine of Triad origin is proposed for this setup. Chinese machines are also available but Japanese, European or American machinery is preferred by manufacturers and buyers. The molds are very costly and need to be carefully picked. Some molds are locally made but people generally prefer Chinese molds that are usually robust and refined. Used molds to manufacture 500 grams plastic bucket are proposed for this setup. Used molds are relatively cheap and able to deliver the desired quality for local buyers.

## 12.6 Furniture and Fixtures

A total of Rs 189,000 is required for purchase of office furniture, fixture and related equipment. The following table gives an estimated breakup:

**Table 6: Furniture and Fixtures Costs**

Description	Quantity	Cost/Unit (Rs.)	Amount (Rs.)
Table & Chair Set (Owner)	1	17,000	17,000
Table & Chair Set (Customer Service)	1	14,000	14,000
Table & Chair Set (Office Staff)	2	14,000	28,000
Air Conditioner (Split Unit)	1	60,000	60,000
Waiting Chairs	10	2,500	25,000
Sofa Set for Customers	1	20,000	20,000
Curtains / Interior Décor		25,000	25,000
<b>Total</b>			<b>189,000</b>

The Office Furniture & Equipment costs are estimated to depreciate at the rate of 10% per annum using diminishing balance method for the projected period.

## 12.7 Raw Material Requirements

Considering the price competition, decreasing margins at retail level, prevailing credit in the market (2-3 months) and limited investment, toll manufacturing or contract manufacturing mode is proposed for the injection molding project. The margins tend to be above average, if the manufacturer is in possession of a rare or

quality mold. A strong referral base, however, is required for toll manufacturing contracts. Raw material inventories in such a mode of manufacturing are not necessary.

## 12.8 Human Resource Requirement

The human resource requirement for the general and management staff are as follows:

**Table 7: Human Resource Requirement**

Description	No. of Employees	Salary per month (Rs.)	Total monthly salary (Rs.)
Owner	01	28,000	28,000
Accountant	01	15,000	15,000
Purchaser	01	10,000	10,000
Store keeper	01	10,000	10,000
Production Manager	01	25,000	25,000
Electrician	01	15,000	15,000
Hydraulics Technician	01	15,000	15,000
Machine Operators	03	12,000	36,000
Helpers	02	10,000	20,000
<b>Total Staff</b>	<b>12</b>		<b>174,000</b>

It is assumed that the owner would be managing the overall affairs of the plastic molding setup. An accountant is required to process bills, invoices, receivables and also maintain accounts etc. The purchaser would be primarily responsible for making daily procurements; raw material and other purchases as and when required. The Production Manager should have considerable knowledge about polymer technology and its properties; preferably having a diploma in plastic technology with 5 to 7 years experience. The machine operators should also have relevant experience of handling and operating injection molding machines and plastic processing.

The proposed project would need a total of 12 persons to handle the plastic injection molding operations. Salaries of all employees are estimated to increase at the rate of 10% annually.

## 12.9 Revenue Generation

The Sales are expected to increase by 10% every year. The 10% annual increase in revenue is expected to result from increase in product price. The prices are exclusive of the General Sales Tax.

The item-wise estimated revenue from injection molding plastic products is as follows

**Table 08: Revenue**

Particulars	Unit	Sales Price (Rs./Unit)	First Year Sales (kg.)	First Year Sales Revenue (Rs)
Plastic containers (contract manufacturing)	Kg	72	74,880	5,391,360
<b>Total</b>				<b>5,391,360</b>

### 12.10 Other Costs

- Machinery Maintenance:** The Injection Molding Machine and molds have a long life, however, the maintenance cost of the machines are usually high, since they need to be oiled and cleaned regularly specially before installing a new mold or starting a fresh production process. The yearly maintenance cost has been taken to be 5% of the written down value of the machine. It is anticipated that the machinery would require an overhaul after every five years. It is, therefore, assumed that machinery overhauling expenditures would be incurred at 10% of the price of the Machinery in Year-5 & Year- 10.
- Rent and deposits:** The proposed premises will be acquired on a rental basis with 3 months deposit and 3 months advance rent after which rent will be payable on monthly basis. The monthly rent is estimated to be Rs. 16/ Sqft. amounting to Rs. 32,800 per month for the proposed injection molding plastic products unit (2,050 Sq Ft.). The rent is estimated to increase at the rate of 10% per annum for the projected period.
- Utilities Requirements:** The following table presents the assumed breakup of utilities on a monthly basis:

**Table 09: Utilities**

Description	Monthly Charges (Rs.)
Electricity	120,000
Water	4,000
Telephone	6,000
<b>Total</b>	<b>130,000</b>

The utilities expense is estimated to increase at the rate of 10% per annum for the projected period.

- **Working Capital Requirements:** It is estimated that an additional amount of Rs. 336,800 will be required as cash in hand to meet the initial working capital requirements during operations. The requirement is based on the rent, utilities and salaries expenses for at least one month. The following table gives the break up.

**Table 10: Working Capital**

Description	Month	Monthly Charges (Rs.)
Utilities	01	130,000
Salaries	01	174,000
Rent	01	32,800
<b>Total</b>		<b>336,800</b>

- **Preliminary Expenses:** The provision for preliminary expenses is assumed to be Rs. 50,000 and will be amortized equally over a 5 year period.
- **Office & Miscellaneous Expenses:** A monthly expense of Rs. 45,000 (1,500 per day) is assumed to be incurred for traveling, office purchases & miscellaneous expenses, which are expected to increase at the rate of 10% per annum for the projected period.
- **Financial Charges:** It is assumed that long-term financing for 8 years will be obtained in order to finance the injection molding setup, including premises renovation, procurement of machinery & equipment and furniture & fixtures etc. This facility is estimated to be acquired at a rate of 08% per annum with 84 monthly installments over a period of seven years after a one year grace period. The installments are assumed to be paid at the end of every month.
- **Taxation:** The business is assumed to run as a sole proprietorship; therefore, tax rates applicable on the income of a non salaried individual taxpayer are used for income tax calculation of the business.
- **Cost of Capital:** The cost of capital is explained in the following table:

**Table 11: Cost of Capital**

Particulars	Rate
Required return on equity	20 %
Cost of finance	8 %
Weighted average cost of capital	9.2 %

The weighted average cost of capital is based on the debt / equity ratio of 90:10.



### 13. CONTACTS - SUPPLIERS, EXPERTS/CONSULTANTS

There are many local suppliers of plastic processing machinery working in Karachi and other cities that may be contacted for quotes or procurement.

#### Machinery Supplier / Consultant Contact

- **Plastipack Machines Pvt. Limited**

G-2, State Life Building No. 03

Dr. Ziauddin Ahmed Road, Karachi

Phone: 021-3568449

Fax: 021-35682150

- **M/s Orient Plastcare Pakistan**

Plot # 126, 127, Sector # 23 Korangi Industrial Area, Karachi

Tel # 021-35115541-35115542 cell # 0333-2133983

- **Pakistan Industrial Technical Assistance Center (PITAC)**

234- Ferozpur Road near Metro Canal Station, Lahore

Phone: 042-99230699, 042-99230575, 042-99230702

- **Plastics Technology Centre**

St -2/1, Sector – 30, Korangi Industrial Area,

Karachi 74900

Phone: 021 – 35066955, 35063589

Fax: 021 – 35060373

**S M E D A**

## 14. ANNEXURE

### 14.1 Annexure 1 - Income Statement

INJECTION MOLDING PLASTIC PRODUCTS										
Projected Income Statement (Rs.)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Revenue</b>	<b>5,391,360</b>	<b>5,930,496</b>	<b>6,523,546</b>	<b>7,175,900</b>	<b>7,893,490</b>	<b>8,682,839</b>	<b>9,551,123</b>	<b>10,506,235</b>	<b>11,556,859</b>	<b>12,712,545</b>
Production Labor	1,332,000	1,465,200	1,611,720	1,772,892	1,950,181	2,145,199	2,359,719	2,595,691	2,855,260	3,140,786
Utilities	1,560,000	1,716,000	1,887,600	2,076,360	2,283,996	2,512,396	2,763,635	3,039,999	3,343,999	3,678,398
<b>Cost of Sales</b>	<b>2,892,000</b>	<b>3,181,200</b>	<b>3,499,320</b>	<b>3,849,252</b>	<b>4,234,177</b>	<b>4,657,595</b>	<b>5,123,354</b>	<b>5,635,690</b>	<b>6,199,259</b>	<b>6,819,185</b>
<b>Gross Profit</b>	<b>2,499,360</b>	<b>2,749,296</b>	<b>3,024,226</b>	<b>3,326,648</b>	<b>3,659,313</b>	<b>4,025,244</b>	<b>4,427,769</b>	<b>4,870,546</b>	<b>5,357,600</b>	<b>5,893,360</b>
<b>General Administrative &amp; Selling Expenses</b>										
Salaries	756,000	831,600	914,760	1,006,236	1,106,860	1,217,546	1,339,300	1,473,230	1,620,553	1,782,608
Rent Expense	393,600	432,960	476,256	523,882	576,270	633,897	697,286	767,015	843,717	928,088
Office & Miscellaneous Expenses	540,000	594,000	653,400	718,740	790,614	869,675	956,643	1,052,307	1,157,538	1,273,292
Amortization Expenses	10,000	10,000	10,000	10,000	10,000	-	-	-	-	-
Depreciation Expense	159,400	143,460	129,114	116,203	104,582	106,124	95,512	85,961	77,364	69,628
Maintenance Expense	54,000	48,600	43,740	39,366	41,429	37,286	33,558	30,202	27,182	30,464
<b>Subtotal</b>	<b>1,913,000</b>	<b>2,060,620</b>	<b>2,227,270</b>	<b>2,414,426</b>	<b>2,629,755</b>	<b>2,864,528</b>	<b>3,122,299</b>	<b>3,408,715</b>	<b>3,726,354</b>	<b>4,084,080</b>
<b>Operating Income</b>	<b>586,360</b>	<b>688,676</b>	<b>796,956</b>	<b>912,222</b>	<b>1,029,558</b>	<b>1,160,716</b>	<b>1,305,470</b>	<b>1,461,831</b>	<b>1,631,246</b>	<b>1,809,280</b>
Financial Charges (08% Per Annum)	156,787	148,922	130,858	111,296	90,109	67,164	42,314	15,402	-	-
<b>Earnings Before Taxes</b>	<b>429,573</b>	<b>539,754</b>	<b>666,097</b>	<b>800,926</b>	<b>939,449</b>	<b>1,093,552</b>	<b>1,263,156</b>	<b>1,446,429</b>	<b>1,631,246</b>	<b>1,809,280</b>
Tax	2,957	13,975	26,610	42,639	63,417	86,533	111,973	139,464	173,749	209,356
<b>Net Profit</b>	<b>426,616</b>	<b>525,779</b>	<b>639,487</b>	<b>758,287</b>	<b>876,032</b>	<b>1,007,019</b>	<b>1,151,182</b>	<b>1,306,964</b>	<b>1,457,497</b>	<b>1,599,924</b>
<b>Monthly Profit After Tax</b>	<b>35,551</b>	<b>43,815</b>	<b>53,291</b>	<b>63,191</b>	<b>73,003</b>	<b>83,918</b>	<b>95,932</b>	<b>108,914</b>	<b>121,458</b>	<b>133,327</b>

## 14.2 Annexure 2 – Statement of Cash Flow

INJECTION MOLDING PLASTIC PRODUCTS											
Projected Statement of Cash Flows (Rs.)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Cash Flow From Operating Activities</b>											
Net Profit	-	426,616	525,779	639,487	758,287	876,032	1,007,019	1,151,182	1,306,964	1,457,497	1,599,924
Add: Depreciation Expense	-	159,400	143,460	129,114	116,203	104,582	106,124	95,512	85,961	77,364	69,628
Amortization Expense	-	10,000	10,000	10,000	10,000	10,000	-	-	-	-	-
<b>Net Cash Flow From Operations</b>	<b>-</b>	<b>596,016</b>	<b>679,239</b>	<b>778,601</b>	<b>884,490</b>	<b>990,614</b>	<b>1,113,144</b>	<b>1,246,694</b>	<b>1,392,925</b>	<b>1,534,861</b>	<b>1,669,552</b>
<b>Cash Flow From Financing Activities</b>											
Receipt of Long Term Debt	1,959,840										
Repayment of Long Term Debt		-	(217,636)	(235,699)	(255,262)	(276,449)	(299,394)	(324,244)	(351,156)	-	-
Owner's Equity	217,760										
<b>Net Cash Flow From Financing Activities</b>	<b>2,177,600</b>	<b>-</b>	<b>(217,636)</b>	<b>(235,699)</b>	<b>(255,262)</b>	<b>(276,449)</b>	<b>(299,394)</b>	<b>(324,244)</b>	<b>(351,156)</b>	<b>-</b>	<b>-</b>
<b>Cash Flow From Investing Activities</b>											
Construction Cost	(205,000)										
Machinery & Mold	(1,200,000)					(120,000)					(120,000)
Office Furniture	(189,000)										
Advance Rent	(196,800)										
Preliminary Expenses	(50,000)										
<b>Net Cash Flow From Investing Activities</b>	<b>(1,840,800)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(120,000)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>(120,000)</b>
<b>NET CASH FLOW</b>	<b>336,800</b>	<b>596,016</b>	<b>461,603</b>	<b>542,902</b>	<b>629,228</b>	<b>594,165</b>	<b>813,749</b>	<b>922,450</b>	<b>1,041,769</b>	<b>1,534,861</b>	<b>1,549,552</b>
Cash at the Beginning of the Period	-	336,800	932,816	1,394,418	1,937,320	2,566,548	3,160,713	3,974,463	4,896,913	5,938,682	7,473,543
Cash at the End of the Period	336,800	932,816	1,394,418	1,937,320	2,566,548	3,160,713	3,974,463	4,896,913	5,938,682	7,473,543	9,023,095

## 14.3 Annexure 3 – Balance Sheet

INJECTION MOLDING PLASTIC PRODUCTS											
Projected Balance Sheet (Rs.)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Assets</b>											
<b>Current Assets</b>											
Cash & Bank Balance	336,800	932,816	1,394,418	1,937,320	2,566,548	3,160,713	3,974,463	4,896,913	5,938,682	7,473,543	9,023,095
Prepaid Rent	196,800	196,800	196,800	196,800	196,800	196,800	196,800	196,800	196,800	196,800	196,800
<b>Total Current Assets</b>	<b>533,600</b>	<b>1,129,616</b>	<b>1,591,218</b>	<b>2,134,120</b>	<b>2,763,348</b>	<b>3,357,513</b>	<b>4,171,263</b>	<b>5,093,713</b>	<b>6,135,482</b>	<b>7,670,343</b>	<b>9,219,895</b>
<b>Fixed Assets</b>											
Machinery & Molds	1,200,000	1,080,000	972,000	874,800	787,320	828,588	745,729	671,156	604,041	543,637	609,273
Building Premises Renovation	205,000	184,500	166,050	149,445	134,501	121,050	108,945	98,051	88,246	79,421	71,479
Office Furniture and Fixtures	189,000	170,100	153,090	137,781	124,003	111,603	100,442	90,398	81,358	73,222	65,900
<b>Total Fixed Assets</b>	<b>1,594,000</b>	<b>1,434,600</b>	<b>1,291,140</b>	<b>1,162,026</b>	<b>1,045,823</b>	<b>1,061,241</b>	<b>955,117</b>	<b>859,605</b>	<b>773,645</b>	<b>696,280</b>	<b>746,652</b>
Preliminary Expenses	50,000	40,000	30,000	20,000	10,000	-	-	-	-	-	-
<b>Total Assets</b>	<b>2,177,600</b>	<b>2,604,216</b>	<b>2,912,358</b>	<b>3,316,146</b>	<b>3,819,171</b>	<b>4,418,754</b>	<b>5,126,380</b>	<b>5,953,318</b>	<b>6,909,127</b>	<b>8,366,623</b>	<b>9,966,548</b>
<b>Owner's Equity</b>	217,760	644,376	1,170,154	1,809,641	2,567,929	3,443,961	4,450,980	5,602,162	6,909,127	8,366,623	9,966,548
<b>Long Term Liability</b>	1,959,840	1,959,840	1,742,204	1,506,505	1,251,243	974,794	675,399	351,156	(0)	-	-
<b>Total Equity &amp; Liabilities</b>	<b>2,177,600</b>	<b>2,604,216</b>	<b>2,912,358</b>	<b>3,316,146</b>	<b>3,819,171</b>	<b>4,418,754</b>	<b>5,126,380</b>	<b>5,953,318</b>	<b>6,909,127</b>	<b>8,366,623</b>	<b>9,966,548</b>

## 14.4 Useful Project Management Tips

### Technology

- **Required spare parts & consumables:** Suppliers credit agreements and availability as per schedule of maintenance be ensured before start of operations.
- **Energy Requirement:** The energy requirements should be properly assessed and alternate source of energy for critical operations must be arranged in advance.
- **Machinery Suppliers:** Suppliers should be asked for training and after sales services through a proper contract.
- **Quality Assurance Equipment & Standards:** Products' quality standards must be defined and a system to check them instituted; this improves credibility.

### Marketing

- **Product Development & Packaging:** Experts' help may be sought for product / service and packaging design & development
- **Ads & P.O.S. Promotion:** Business promotion and dissemination through banners and launch events is recommended. Product brochures should be developed from quality service providers.
- **Sales & Distribution Network:** Expert's advice and distribution agreements are required.
- **Price - Bulk Discounts, Cost plus Introductory Discounts:** Price should never be allowed to compromise quality. Price during introductory phase may be lower and used as a promotional tool. Product cost estimates should be carefully documented before price setting.

### Human Resources

- **Adequacy & Competencies:** Skilled and experienced staff should be hired for greater productivity and efficiency
- **Performance Based Remuneration:** Attempt to manage human resource cost should be focused through performance measurement and performance based compensation.
- **Training & Skill Development:** Encouraging training and skill of self & employees through experts and exposure of best practices is route to success.

Least cost options for Training and Skill Development (T&SD) may be linked with compensation benefits and awards.

### 14.5 Useful Links

- **Prime Minister's Office**  
[www.pmo.gov.pk](http://www.pmo.gov.pk)
- **Small & Medium Enterprises Development Authority (SMEDA)**  
[www.smeda.org.pk](http://www.smeda.org.pk)
- **National Bank of Pakistan (NBP)**  
[www.nbp.com.pk](http://www.nbp.com.pk)
- **First Women Bank Limited (FWBL)**  
[www.fwbl.com.pk](http://www.fwbl.com.pk)
- **Government of Pakistan**  
[www.pakistan.gov.pk](http://www.pakistan.gov.pk)
- **Ministry of Industries & Production**  
[www.moip.gov.pk](http://www.moip.gov.pk)
- **Ministry of Education, Training & Standards in Higher Education**  
<http://moptt.gov.pk>
- **Government of Punjab**  
[www.punjab.gov.pk](http://www.punjab.gov.pk)
- **Government of Sindh**  
[www.sindh.gov.pk](http://www.sindh.gov.pk)
- **Government of Khyber Pakhtunkhwa**  
[www.khyberpakhtunkhwa.gov.pk](http://www.khyberpakhtunkhwa.gov.pk)
- **Government of Balochistan**  
[www.balochistan.gov.pk](http://www.balochistan.gov.pk)
- **Government of Gilgit Baltistan**  
[www.gilgitbaltistan.gov.pk](http://www.gilgitbaltistan.gov.pk)
- **Government of Azad Jammu Kashmir**  
[www.ajk.gov.pk](http://www.ajk.gov.pk)
- **Trade Development Authority of Pakistan (TDAP)**  
[www.tdap.gov.pk](http://www.tdap.gov.pk)
- **Security Commission of Pakistan (SECP)**  
[www.secp.gov.pk](http://www.secp.gov.pk)
- **Federation of Pakistan Chambers of Commerce and Industry (FPCCI)**  
[www.fpcci.com.pk](http://www.fpcci.com.pk)
- **State Bank of Pakistan (SBP)**  
[www.sbp.org.pk](http://www.sbp.org.pk)



## 15. KEY ASSUMPTIONS

Particulars	Assumption
Sales Increase	10 % per year
Increase in Cost of Raw Materials	10 % per year
Increase in Staff Salaries	10 % per year
Increase in Utilities (Electricity / Water / Gas)	10 % per year
Increase in Rent	10 % per year
Increase in Office Expenses	10 % per year
Debt / Equity Ratio	90 : 10
Depreciation	
o Plant Building	10 % per annum (Diminishing Balance)
o Machinery & Molds	10 % per annum (Diminishing Balance)
o Office Furniture & Equipment	10 % per annum (Diminishing Balance)
Machine Overhauling Cost	10 % of Cost Price (Year 5 & Year 10)
Machine Annual Maintenance Cost	5% of Written Down Value
Loan Period	8 Years
Loan Grace Period	1 Year
Loan Installments	Monthly
Financial Charges (Loan Rate)	08 % per annum
Tax Rate	Tax rates for non-salaried individuals

