Pre-Feasibility Study

(Injection Molding Plastic Products)

HEAD OFFICE

Constitution Avenue, Sector G-5/2,
ISLAMABAD
Ph#. 051-9225393

PCSIR , Precision System Training Centre – Lahore

Ferozepur Road, Lahore
Ph#. 042-99231797 Fax#. 042-99231796
Email: pstc_lhr@hotmail.com

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

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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, and production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in Injection Molding Plastic Products, by providing them 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 it's successful management.

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

INTRODUCTION TO PCSIR, PSTC, LAHORE

Ministry of Science of Technology, Government of Pakistan has established "Precision Systems Training Centre (PSTC), Lahore" under the umbrella of Pakistan Council of Scientific & Industrial

Research (PCSIR), located on canal side at PCSIR Campus, Ferozepur Road, Lahore.

Since most of the Engineering Industry of the country is in the province of Punjab and, therefore, industrialists of the province were long demanding PSTC at Lahore. The demand of the province is fulfilled and PSTC – Lahore came into being in early 2004.

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 components using injection grade HDPE / PP plastic etc.

The injection molding setup would have an installed capacity to manufacture 150000 units of up to 500 grams plastic components. However, the plant is estimated to manufacture 100000 components. 07 personnel would be required to manage the operations of the plastic injection molding setup.

Total cost estimates are Rs. 2.002 million..

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
5. Linkages

INTRODUCTION TO SCHEME

Prime Minister's 'Youth Business Loans' Programme, 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 by 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).

BRIEF DESCRIPTION OF PROJECT & PRODUCT

There are many different types of plastic and have different use of plastic in our everyday life, which 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 etc.

The proposed facility is to be setup with used plastic injection molding machine including molds for production of up to 500 grams plastic components.

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.

The project is assumed to be operated 16 hours a day. The setup would have an installed capacity to manufacture 150000 units of up to 500 grams plastic components per annum. Karachi, Hub, Hyderabad, Lahore, Gujranwala, Multan, Sialkot, Faisalabad, Gujrat, Rawalpindi, Quetta and Peshawar etc. are good markets for the project under consideration.

The proposed project will provide direct employment to 07 people.

The business will be setup in rented premises, having covered area of 1500 sq.ft.

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

INSTALLED & 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 200000 units up to 500 grams plastic components per annum. However the plant is estimated to manufacture 160000 plastic components.

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.

POTENTIAL TARGET MARKETS

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.

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.

PROJECT ECONOMICS

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

Project Economics

Description	Details
Internal Rate of Return (IRR)	80%
Payback Period (yrs)	----
Net Present Value (NPV)	----

PROJECT FINANCING

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

Project Financing

Description	Details
Total Equity (10%)	200250
Bank Loan (90%)	1802250

Markup to the Borrower (%age/annum)	8%
Tenure of the Loan (Years)	8
Grace Period (Year)	1

PROJECT COST

Following requirements have been identified for the operation of the proposed business. A rental premise has been recommended for this project.

Project Economics

Description	Amount (Rs.)
Machinery	**11,60000**
Furniture and fixture office equipment	**17,500**
Salary for 01 months	10,0000
Tooling (Moulds)	60,0000
Raw Material	10,0000
Rent for 01months	25,000
Total Capital Cost:-	**20,02500**

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

SPACE REQUIREMENT

The area has been calculated on the basis of space requirement for production, management and storage. However, the units operating in the industry do not follow any set pattern. Project space requirement will be **Total Area:**- 1500sft

Premises will be obtained on rent @ Rs. 25000/- per month.

MACHINERY AND EQUIPMENT

Following table provides list of machinery and equipment required for an Injection Moulding of different weight components.

Machinery and Equipment

Description	Quantity	Cost Rs./Unit	Total Rs.
Injection Moulding Machine 100 tons (used)	1	11,00,000	11,00,000
Connection and AVR	1	60,000	60,000
Total:-	**02**	**11,60000**	**11,60000**

Note:- The cost may vary at the time of purchase.

The workshop will take work orders for parts having cylindrical profiles, mostly the rotor shafts of electrical motors and pumps. Lathe machine will be used to bring the shaft to desired diameters, Center grinding machine for fine machining and shaper machine to cut notches, etc. Other equipment will be used to support the main machines for finishing of facilitating work.

FURNITURE & FIXTURE

Following furniture and fixture will be required for the project:

Furniture & Office Equipment Costs

Description	Quantity	Cost	Amount
Chairs	3	2000	6000
Table	1	3000	3000
Steel Cupboard	1	8000	8000
Telephone	1	500	500
Total:-	**06**	**13,500**	**17500**

RAW MATERIAL REQUIREMENTS

Following will be required for starting the business.

Cost of Raw Material

Description	Qty	Amount
Tooling (Moulds)	03	60,0000
Raw Material (Plastics of different types)	----	10,0000
Total:-	**03**	**70,0000**

HUMAN RESOURCE REQUIREMENT

Following table provides details of human resource required for this venture:

Human Resource Requirement

Description	Qty	Amount
Owner Manager	1	25,000
Operator Rs. 15000/per month	3	45,000
Helper Rs.10000/ per month	3	30,000
Total:-	**07**	**100,000**

Contact Details

The Director/ Principal

PCSIR, PSTC, Ferzopur, Road, Lahore
Ph#. 042-99231797
Fax#. 042-99231796
Email. Pstc_lhr@hotmail.com