



Pre-Feasibility Study (Steel Products Welding)



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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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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 **Steel Products Welding** 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 & 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 shall 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 / 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 Loans' Programme, for young entrepreneurs, with an allocated budget of Rs. 5.0 Billion for the year 2013-14, is designed to provide subsidized financing at 8% mark-up per annum for one hundred thousand (100,000) beneficiaries, through designated financial institutions, initially by the National Bank of Pakistan (NBP) and the First Women Bank Ltd. (FWBL).

Loans from Rs.0.1 Million to Rs. 2.0 Million with tenure upto 8 years inclusive of grace period of 1 year 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 proposed business is a Steel Products Welding workshop located in rental premises along roadside or near a truck stand / bus stand in small towns or cities, which will operate approximately 8 hours a day with a five men team including the owner manager.

In Pakistan, domestic as well as commercial construction is being carried out on a sizeable scale. Construction sector requires welding services for different operations depending upon the nature and scope of work.

The transport vehicles in Pakistan are generally not in very good shape. As a lot of wear and tear occurs during operations, the services of welders are required to fulfill the maintenance requirements of the transport vehicles. A welding shop is usually a part of the truck / bus of parking stands.

Capital cost for setting up the steel products welding workshop is estimated at Rs.0.82 million with a total project cost of Rs.1.43 million. The project is proposed to be financed through 90% debt and 10% equity. The NPV is projected to be Rs.8.94 Million, with an IRR of 61% and a payback period of 2.56 years. The legal business status of this project is proposed as a 'Sole Proprietorship'.

6. BRIEF DESCRIPTION OF PROJECT & PRODUCT

The project is about setting up a Steel Products Welding Workshop. The project will have full operational capacity to undertake 270 major jobs, which is equivalent 1000 small jobs annually, of different nature. Initially the workshop will operate for approximately 8 hours a day, gradually increasing to 2 shifts for 16 hours depending upon the workload. Initially, the business will provide employment opportunity to 05 individuals directly including the owner.

The business will provide services mainly to construction as well as transport sectors but can also facilitate manufacturers. The major portion of the capital investment is consumed in equipment and plant.

All the expenditures that are required to be incurred for setting up of workshop and purchase of raw material for the start-up are included in cost of the project.

The business will be established in rental premises having covered area of approximately 300 sq.ft.

7. CRITICAL FACTORS

Following factors play a critical role in successful execution of the business operations and may impact profitability:

- Entrepreneur's technical knowhow and experience of the business.
- For fresh hands, welding certification and guidance from a senior welder is recommended.
- Availability of skilled labor having technical knowledge.
- Quality of the finished product.
- Ability to generate work orders through personal efforts and movement from site to site with references.

8. INSTALLED & OPERATIONAL CAPACITIES

The installed capacity of the project is to manufacture 270 major products while operating at full capacity, which is equal to 1000 small jobs per year. The total human resource strength will be five including the owner. The workshop will operate 8 hours daily.

9. GEOGRAPHICAL POTENTIAL FOR INVESTMENT

Main focus of the project is on construction and transport sector, hence it can be started in rural as well as urban areas of Pakistan including Lahore, Karachi, Quetta, Peshawar, Gujrat, Sialkot, Gujranwala etc. and in towns and to some extent in rural areas as well, where there is a sizeable quantum of construction and transportation activities.

10. POTENTIAL TARGET MARKETS / CITIES

The potential target market can be anywhere around infrastructure developmental facilities. It can be started in cities like Lahore, Karachi, Quetta, Peshawar, Gujrat, Sialkot, Gujranwala etc. and in towns and to some extent in rural areas as well.

11. PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of the project under the Prime Minister's Youth Business Loan scheme. Various cost 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.

11.1. Project Economics

All the figures in this financial model have been calculated for a target production of steel gates, windows and grills working at an efficiency of about 65%.

The following table shows internal rate of return, payback period and NPV.

Table 1: Project Economics

Description	Details
Internal Rate of Return (IRR)	61%
Payback Period (yrs)	2.56
Net Present Value (NPV)	Rs. 8,940,228

Rates of Return and profitability of business are highly dependent on the efficiency of plant and equipment, efficiency of workers and quality of raw material.

11.2. 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. 143,344
Bank Loan (90 %.)	Rs. 1,290,094
Markup to the Borrower (%age/annum)	8%
Tenure of the Loan (Years)	8
Grace Period (Year)	1

11.3. Project Cost

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

Table 3: Capital Investment for the Project

Capital Investment	Amount (Rs.)
Plant and Machinery	675,000
Furniture and Office Equipment	70,000
Pre-operating Cost	75,000
Total Capital Costs	820,000
Initial Working Capital	613,438
Total Project Cost	1,433,438

11.4. Space Requirement

The area has been calculated on the basis of space requirement placement of machinery and retaining finished goods. However, the units operating in the

industry do not follow any set pattern. Following table shows calculations for project space requirement.

Table 4: Space Requirement

Space Requirement	Sq. ft
Workshop Area	300
Total Area	300

Rental expense for the space required is estimated at Rs. 15,000 per month.

11.5. Machinery and Equipment

Following table provides detail of machinery and equipment required for the workshop.

Table 5: List of Machinery and Equipment

Description	Capacity Units	Quantity	Cost Rs. / Unit	Total Cost Rs.
Electric Welding Plant	600A	2	125,000	250,000
Transformer	5 KVA	1	200,000	200,000
Gas Welding Plant	Local	1	45,000	45,000
Welding Rods	20KG	238	210.09	50,000
Circular Disc Cutter	16"	1	30,000	30,000
Personal Protective Equipment(PPE)			50,000	50,000
Measuring Tools & Gauges			50,000	50,000
Total				675,000

Main equipment for this project is electric welding plant along with its accessories. This Pre-feasibility study proposes 2 plants, each with a capacity of 600 Amperes. Welding Plants are Chinese manufactured and are available in the market.

11.6. Furniture & Office Equipment

The following furniture and office equipment will be required. Costs are based on the assumption that a setup will be required to manufacture its products in an effective way.

Table 6: Furniture & Office Equipment Costs

	Quantity	Cost	Amount (Rs.)
Chairs	3	4,000	12,000
Stools	4	3,000	12,000
Table	1	5,500	5,500
Steel Cupboard	2	12,000	24,000
Metal Working Table	1	15,000	15,000
Telephone	1	1,500	1,500
Total			70,000

11.7. Raw Material Requirements

Following table shows approximate monthly requirement of raw material for setting up a welding workshop.

Table 7: Cost of Material

	Unit	Rate (Rs.)	Qty	Amount (Rs.)
Angle Iron	Kg	77	1,000	77,000
Round Bar *	Kg	75	725.83	54,437
Steel Sheet (18 Guage)	Kg	105	1,000	105,000
Flat Bar	Kg	74	500	37,000
Total				273, 437

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11.8. Human Resource Requirement

The table below provides details of human resources required to run such a business. Owner / manager will also look after financial, marketing and distribution matters whereas welder and helpers will help in production.

Table 8: Human Resource Requirement

Description	No. of Employees	Salary per month (Rs.)
Owner Manager	1	30,000
Welder	2	30,000
Helper	2	20,000
Total	5	80,000

11.9. Revenue Generation

Projected revenues based on assumptions are given in the table below. However, the actual situation may vary slightly.

Table 9: Revenue Generation

Major Products	Production / Year	Sales Price (Rs. / Unit)	Production Capacity	Total Sales Revenue (Rs.)
Main Gate	39.0	40,000	65%	1,560,000
Windows	78.0	20,000	65%	1,560,000
Grills	58.5	30,000	65%	1,755,000
1st Year Sales Revenue				4,875,000

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12. CONTACTS - SUPPLIERS

- Pakistan Industrial Technical Assistance Center (PITAC)
234 – Ferozpur Road, Near Metro Canal Station, Lahore
Tel: 042 – 99230699, 99230572
- Technology Upgradation and Skill Development Company (TUSDEC)
State Cement Corporation Building, Kot Lakhpat, Lahore
Tel: 042 – 111 000 143
- Technical Education & Vocational Training Authority (TEVTA)
Secretariat, 96-H, Gulberg Road, Lahore.
Tel: 042 - 99263055-59
- Branderath Road Market, Lahore
- Al Hadeed Bazaar, Lahore
- Landa Bazaar, Lahore



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13. ANNEXURE

13.1. Income Statement

Income Statement										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Revenue	4,875,000	6,187,500	7,713,750	9,483,375	10,980,750	12,078,825	13,286,708	14,615,378	16,076,916	17,684,608
<i>Cost of sales</i>										
Raw Material for Gate	780,000	990,000	1,234,200	1,517,340	1,756,920	1,932,612	2,125,873	2,338,461	2,572,307	2,829,537
Raw Material for Window	780,000	990,000	1,234,200	1,517,340	1,756,920	1,932,612	2,125,873	2,338,461	2,572,307	2,829,537
Raw Material for Railing	877,500	1,113,750	1,388,475	1,707,008	1,976,535	2,174,189	2,391,607	2,630,768	2,893,845	3,183,229
Consumables	243,750	309,375	385,688	474,169	549,038	603,941	664,335	730,769	803,846	884,230
Electricity Expense	600,000	660,000	726,000	798,600	878,460	966,306	1,062,937	1,169,230	1,286,153	1,414,769
Total cost of sales	3,281,250	4,063,125	4,968,563	6,014,456	6,917,873	7,609,660	8,370,626	9,207,688	10,128,457	11,141,303
Gross Profit	1,593,750	2,124,375	2,745,188	3,468,919	4,062,878	4,469,165	4,916,082	5,407,690	5,948,459	6,543,305
<i>General administration & selling expenses</i>										
Administration expense	960,000	1,056,000	1,161,600	1,277,760	1,405,536	1,546,090	1,700,699	1,870,768	2,057,845	2,263,630
Rent expense	180,000	198,000	217,800	239,580	263,538	289,892	318,881	350,769	385,846	424,431
Printing & Stationary	24,000	25,200	26,460	27,783	29,172	30,631	32,162	33,770	35,459	37,232
Entertainment	60,000	63,000	66,150	69,458	72,930	76,577	80,406	84,426	88,647	93,080
Promotional expense	15,000	13,500	12,150	10,935	9,842	8,857	7,972	7,174	6,457	5,811
Depreciation expense	81,700	81,700	81,700	81,779	81,779	85,564	85,655	85,655	85,655	85,761
Miscellaneous expense	19,200	21,120	23,232	25,555	28,111	30,922	34,014	37,415	41,157	45,273
Subtotal	1,354,900	1,473,520	1,604,092	1,747,850	1,905,908	2,068,532	2,259,788	2,469,979	2,701,067	2,955,217
Operating Income	238,850	650,855	1,141,096	1,721,069	2,156,970	2,400,633	2,656,294	2,937,711	3,247,392	3,588,088
Other income (interest on cash)	-	-	-	-	-	-	-	-	-	-
Earnings Before Interest & Taxes	238,850	650,855	1,141,096	1,721,069	2,156,970	2,400,633	2,656,294	2,937,711	3,247,392	3,588,088
Interest on short term debt	-	-	-	-	-	-	-	-	-	-
Interest expense on long term debt (Project Loan)	107,077	98,030	86,140	73,262	59,315	44,212	27,854	10,139	-	-
Subtotal	107,077	98,030	86,140	73,262	59,315	44,212	27,854	10,139	-	-
Earnings Before Tax	131,773	552,825	1,054,956	1,647,807	2,097,654	2,356,422	2,628,440	2,927,572	3,247,392	3,588,088
Tax	-	15,282	80,743	177,061	267,031	318,784	379,610	454,393	534,348	619,522
NET PROFIT/(LOSS) AFTER TAX	131,773	537,542	974,213	1,470,746	1,830,624	2,037,638	2,248,830	2,473,180	2,713,045	2,968,566

13.2. Statement of Cash Flow

Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<i>Operating activities</i>											
Net profit		131,773	537,542	974,213	1,470,746	1,830,624	2,037,638	2,248,830	2,473,180	2,713,045	2,968,566
Add: depreciation expense		81,700	81,700	81,700	81,779	81,779	85,564	85,655	85,655	85,655	85,761
amortization of pre-operating costs		15,000	15,000	15,000	15,000	15,000	-	-	-	-	-
Deferred income tax		-	15,282	80,743	177,061	267,031	318,784	379,610	454,393	534,348	619,522
Accounts receivable		(200,342)	(53,938)	(62,723)	(72,724)	(61,536)	(45,126)	(49,639)	(54,603)	(60,063)	(66,070)
Raw material inventory	(273,438)	50,000	(60,156)	(69,953)	(81,108)	(68,630)	(50,328)	(55,361)	(60,897)	(66,987)	(73,686)
Pre-paid building rent	(15,000)	(1,500)	(1,650)	(1,815)	(1,997)	(2,196)	(2,416)	(2,657)	(2,923)	(3,215)	35,369
Cash provided by operations	(288,438)	76,630	533,780	1,017,165	1,588,758	2,062,071	2,344,115	2,606,437	2,894,804	3,202,782	3,569,463
<i>Financing activities</i>											
Project Loan - principal repayment		-	(143,262)	(155,153)	(168,030)	(181,977)	(197,081)	(213,438)	(231,153)	-	-
Additions to Project Loan	1,290,094	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	-	-	-	-	-	-	-	-	-	-	-
Issuance of shares	143,344	-	-	1,736	-	87,425	2,010	-	-	2,327	-
Cash provided by / (used for) financing activities	1,433,438	-	(143,262)	(153,416)	(168,030)	(94,551)	(195,070)	(213,438)	(231,153)	2,327	-
<i>Investing activities</i>											
Capital expenditure	(820,000)	-	-	(1,736)	-	(87,425)	(2,010)	-	-	(2,327)	-
Acquisitions											
Cash (used for) / provided by investing activities	(820,000)	-	-	(1,736)	-	(87,425)	(2,010)	-	-	(2,327)	-
NET CASH	325,000	76,630	390,518	862,013	1,420,727	1,880,095	2,147,034	2,392,999	2,663,651	3,202,782	3,569,463



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13.3. Balance Sheet

Balance Sheet											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Assets											
<i>Current assets</i>											
Cash & Bank	325,000	401,630	792,149	1,654,161	3,074,889	4,954,983	7,102,018	9,495,017	12,158,667	15,361,449	18,930,912
Accounts receivable		200,342	254,281	317,003	389,728	451,264	496,390	546,029	600,632	660,695	726,765
Raw material inventory	273,438	223,438	283,594	353,547	434,655	503,284	553,613	608,974	669,872	736,859	810,545
Pre-paid building rent	15,000	16,500	18,150	19,965	21,962	24,158	26,573	29,231	32,154	35,369	-
Total Current Assets	613,438	841,910	1,348,173	2,344,677	3,921,233	5,933,689	8,178,594	10,679,251	13,461,325	16,794,372	20,468,221
<i>Fixed assets</i>											
Land	-	-	-	-	-	-	-	-	-	-	-
Building/Infrastructure	-	-	-	-	-	-	-	-	-	-	-
Machinery & equipment	675,000	607,500	540,000	472,500	405,000	337,500	270,000	202,500	135,000	67,500	-
Furniture & fixtures	68,500	54,800	41,100	27,400	13,700	87,425	69,940	52,455	34,970	17,485	-
Office vehicles	-	-	-	-	-	-	-	-	-	-	-
Cafe equipment	1,500	1,000	500	1,736	1,158	579	2,010	1,340	670	2,327	1,551
Total Fixed Assets	745,000	663,300	581,600	501,636	419,858	425,504	341,950	256,295	170,640	87,312	1,551
<i>Intangible assets</i>											
Pre-operation costs	75,000	60,000	45,000	30,000	15,000	-	-	-	-	-	-
Legal, licensing, & training costs	-	-	-	-	-	-	-	-	-	-	-
Total Intangible Assets	75,000	60,000	45,000	30,000	15,000	-	-	-	-	-	-
TOTAL ASSETS	1,433,438	1,565,210	1,974,773	2,876,313	4,356,090	6,359,193	8,520,544	10,935,546	13,631,965	16,881,684	20,469,772
Liabilities & Shareholders' Equity											
<i>Current liabilities</i>											
Accounts payable	-	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	-	-	-	-	-	-	-	-	-	-	-
<i>Other liabilities</i>											
Deferred tax	-	-	15,282	96,026	273,087	540,118	858,902	1,238,511	1,692,904	2,227,252	2,846,774
Long term debt (Project Loan)	1,290,094	1,290,094	1,146,832	991,679	823,649	641,672	444,592	231,153	-	-	-
Total Long Term Liabilities	1,290,094	1,290,094	1,162,114	1,087,705	1,096,736	1,181,790	1,303,494	1,469,665	1,692,904	2,227,252	2,846,774
<i>Shareholders' equity</i>											
Paid-up capital	143,344	143,344	143,344	145,080	145,080	232,505	234,516	234,516	234,516	236,843	236,843
Retained earnings		131,773	669,315	1,643,528	3,114,274	4,944,898	6,982,535	9,231,365	11,704,545	14,417,589	17,386,156
Total Equity	143,344	275,117	812,659	1,788,608	3,259,354	5,177,403	7,217,051	9,465,881	11,939,060	14,654,432	17,622,998
TOTAL CAPITAL AND LIABILITIES	1,433,438	1,565,210	1,974,773	2,876,313	4,356,090	6,359,193	8,520,544	10,935,546	13,631,965	16,881,684	20,469,772

13.4. Useful Project Management Tips

Technology

- **List of Machinery & Equipment** (As per section 11.5)
- **Required spare parts & consumables:** Suppliers credit agreements and availability as per schedule of maintenance be ensured before start of operations.
- **Energy Requirement:** Should not be overestimated or installed in excess and alternate source of energy for critical operations may be arranged in advance.
- **Machinery Suppliers:** Should be asked for training and after sales services under the contract with the machinery suppliers.
- **Quality Assurance Equipment & Standards:** Whatever means required product quality standards need to be defined and a system to check them instituted, this improves credibility.

Marketing

- **Product Development:** Expert's help may be sought for product / service development.
- **Customer Satisfaction:** Satisfied customer will come again.
- **Reference Based Sales System:** Price should never be allowed to compromise quality. Good quality will establish good relationship that will enhance reference based sales.

Human Resources

- **Adequacy & Competencies:** Skilled and experienced staff should be hired for greater productivity and efficiency of business.
- **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.

13.5. Useful Links

- Prime Minister's Office, www.pmo.gov.pk
- Government of Pakistan, www.pakistan.gov.pk
- Ministry of Industries & Production, www.moip.gov.pk
- Small & Medium Enterprises Development Authority (SMEDA), www.smeda.org.pk
- Ministry of Education, Training & Standards in Higher Education, www.moptt.gov.pk
- Government of Punjab, www.punjab.gov.pk
- Government of Sindh, www.sindh.gov.pk
- Government of Khyber Pakhtunkhwa, www.khyberpakhtunkhwa.gov.pk
- Government of Balochistan, www.balochistan.gov.pk
- Government of Gilgit Baltistan, www.gilgitbaltistan.gov.pk
- Government of Azad Jamu Kashmir, www.ajk.gov.pk
- Federation of Pakistan Chambers of Commerce and Industry (FPCCI), www.fpcci.com.pk
- National Bank of Pakistan (NBP), www.nbp.com.pk
- Technical Education and Vocational Training Authority (TEVTA), www.tevta.gov.pk
- Pakistan Industrial and technical Assistance (PITAC), www.pitac.gov.pk
- Technology Up-gradation and Skill Development Company (TUSDEC), www.tusdec.org.pk

The logo for SMEDA (Small & Medium Enterprises Development Authority) is displayed in a light blue rectangular box. The letters 'S', 'M', 'E', 'D', and 'A' are arranged horizontally in a large, white, serif font.

14. KEY ASSUMPTIONS

Table 10: Operating Assumptions

Major Orders (Annually)	270
Days Operational per Year (Days)	300
Accounts Payable (Days)	7
Accounts Receivable (Days)	7

Table 11 Expense Assumptions

Raw Material Cost Growth Rate (Annually)	10%
Plant Maintenance Cost Annually (% of plant cost)	10%
Cost of Electricity	Rs. 50,000 per month



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