PROJECT REPORT

Of

ELECTRIC IRON

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Electric Iron**.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

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PROJECT AT A GLANCE

1	Name of the Entreprenuer		xxxxxxxxxx	
2	Constitution (legal Status)	:	xxxxxxxxxx	
3	Father / Spouse Name		xxxxxxxxxxxx	
4	Unit Address	:	xxxxxxxxxxxxxxxxxxxxxxx	
			District : xxxxxxx	
			Pin: xxxxxxx	State: xxxxxxxxxx
			Mobile xxxxxxx	
5	Product and By Product	:	**ELECTRIC IRON**	
6	Name of the project / business activity proposed :		**ELECTRIC IRON MANUFACTURING UNIT**	
7	Cost of Project	:	Rs.29.44 Lakhs	
8	Means of Finance			
	Term Loan		Rs.21 Lakhs	
	Own Capital		Rs.2.94 Lakhs	
	Working Capital		Rs.5.5 Lakhs	
9	Debt Service Coverage Ratio	:	2.29	
10	Pay Back Period	:	5	Years
11	Project Implementation Period	:	5-6	Months
12	Break Even Point	:	41%	
13	Employment	:	11	Persons
14	Power Requirement	:	30	KW
15	Major Raw materials	:	Aluminium Billet, PTFE Powder, Heating Element, Plastic Resin,Thermostat, Electric cord,Packing material	
16	Estimated Annual Sales Turnover (Max Utilized Capacity)	:	147.41	Lakhs
17	Detailed Cost of Project & Means of Finance			

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Building /Shed 2000 Sq ft	Own/Rented
Plant & Machinery	22.00
Furniture & Fixtures	1.33
Working Capital	6.11
Total	**29.44**

MEANS OF FINANCE

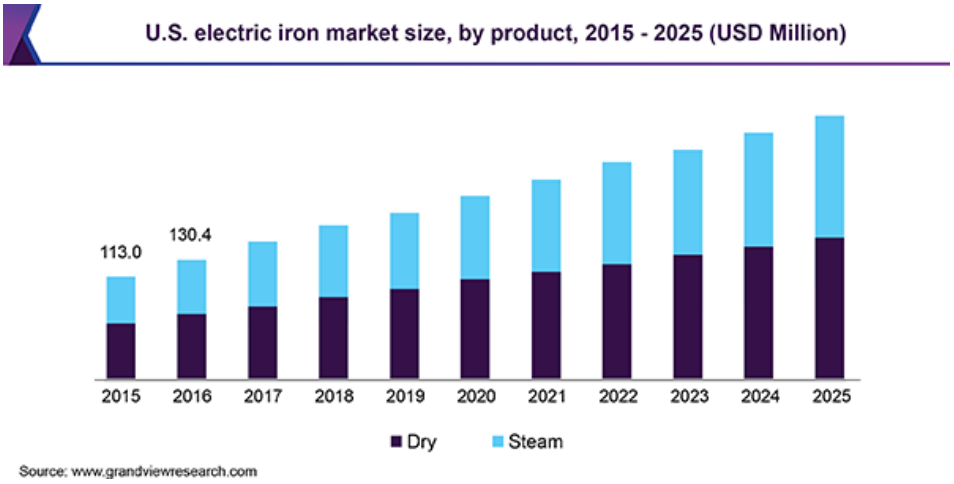
Particulars	Amount
Own Contribution	2.94
Term Loan	21.00
Working Capital	5.50
Total	**29.44**

ELECTRIC IRON

Introduction:A clothes iron (also flatiron or smoothing iron) has a handle and a flat triangle shaped surface. Electricity makes the flat surface hot. A hot iron is rubbed on clothes to make them flat and smooth. This is called ironing. The handle does not get hot because that is where it is held. They are named clothes irons because they used to be made out of the metal iron.It is an electrical device that heats up to take wrinkles out of clothing. It is somewhat triangle shaped with a smooth flat bottom. The pointed end is for pressing corners and tight areas. It holds water to produce steam, which helps to remove wrinkles. Before electric irons there were heavy cast iron irons that were heated up by fire before use. Electric coil of Iron is most resistance wire heating elements use nichrome 80/20 (80% nickel, 20% chromium) wire, ribbon, or strip. Nichrome 80/20 is an ideal material, because it has relatively high resistance and forms an adherent layer of chromium oxide when it is heated for the first time.

Uses & Market Potential: Ironed clothes make one look smarter and leave a better impression. The use of ironing extends the life of the fabric over time as it prevents the clothes from fraying. Furthermore, it is much better than the alternative to dry cleaning, which uses harmful chemical perchloroethylene. Ironing helps in removing the smell of bleach from the clothes.Student fraternity has emerged as one of the key buyers of the product. Most schools and educational institutions based in Asian countries

including India, China, Bangladesh, and Pakistan have a strict uniform. It is made mandatory among students to wear clean and well-ironed clothes to invoke a habit of disciplined, hygienic, and smart lifestyle. People working in corporate have also included ironed clothes as a part of office wear.The global electric iron market size was valued at USD 1.0 billion in 2018 and anticipated to expand at a CAGR of 8.3% over the forecast period. Increasing demand among the millennial to look well-dressed is expected to promote the utility of these products. Furthermore, a well-ironed set of clothes has become the symbol of an elite society member.



Product:

Electric Iron

Raw Material:

1. Aluminium Billets
2. Heating Element
3. Plastic Resins Bakelite
4. PFTE Powder
5. Thermostat
6. Electric Cord
7. Packing Material

Manufacturing Process:

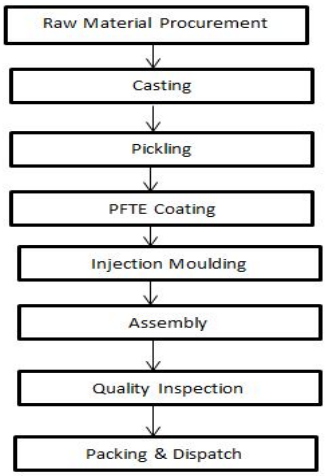


Fig.1 – Flow Chart

At first, the raw material is procured from the authorized local vendor and stored in the inventory. In the first step, the electric iron sole plate is manufactured by pouring the molten aluminium in the mould. The mould has the desired shape as required for the sole plate.

The furnace is kept on and brought up to desired temperature of melting point aluminium. Aluminium billets are brought from the inventory and fed into the furnace through feeder. After this, the molten aluminum is poured into moulds having the desired shape of sole plate of electric iron. The molten aluminium solidifies which is separated from the mould.

In the next step, the sole plate coated with non-stick material to improve the base efficiency.The base plate is first dipped in the acidic solution of sulphuric acid for pickling process. The base plate is kept inside the acid for 15-20 minutes.

In the next step, they are pre heated to a temperature of 350 to 400°C. After this, PFTE is coated over the base plate in PFTE coating plant. The PTFE powder is sprayed over the surface of base plate at desired pressure using electrostatic powder spray guns.A process called electrostatic spray deposition (ESD) is typically used to achieve the application of the powder coating to a metal substrate. This application method uses a spray gun, which applies an electrostatic charge to the powder particles, which are then attracted to the grounded part. The waste powder is separated through cyclone arrangement could be reuse.

In the next step, the plastic casing for cover body and handle of the electric iron is injection moulded using plastic injection moulding machine. The die of desired shape is precisely assembled in the clamping unit of the machine as per production requirement.

The barrel heaters are started and brought to the desired temperature to melt down the thermoplastic pellets. Plastic pellets are then brought from the warehouse and fed into the hopper of the machine. From the hopper, these plastic pellets come into the feed section of the barrel. There is a screw inside the barrel which rotates about the vertical axis and moves the pellets into heating section of barrel where these plastic pellets melt to a semi-solid state and are ready to be injected into the mold of the machine.

When resin melts the barrel compress the molten plastic into the profile dies to form the desired contours. After this, it solidifies to form the desired molded part. These plastic covers are collected and send to the assembly shop.

The heating element, thermostat are electrically connected using electric cables over the base plate. The electric cord is connected for power supply to the heating element. Plastic covers and handles are assembled at precise locations.

In the next step, quality testing of the assembly unit is performed for satisfactory performance. After this, the Electric irons are packed and dispatched as per the required quantity.

Area:

The industrial setup requires space for Inventory, workshop or manufacturing area, space for power supply utilities and auxiliary like Generator setup. Also some of the area of building is required for office staff facilities, documentation, office furniture, etc. Thus, the approximate total area required for complete industrial setup is 1500 - 2000Sqft. Civil work cost will be Rs. 9 Lac (Approx.)

Machines:

1. **Furnace –**The furnace uses electrical induction heating to melt the aluminium using principle of induction melting is that a high voltage electrical source from a primary coil induces a low voltage, high current in the metal, or secondary coil. Induction heating is simply a method of transferring heat energy.

2. **PFTE Coating Plant** – The plant consist of heating furnace, spray guns for adherence of Teflon over the heating surface. The plant is semi-automatic designed as per the production capacity for the plant.

i) Coating Booth –The coating booth represents the area for powder coating with cyclone arrangement and pressure valves to collect the waste powder for reuse.

ii) Spray Gun –It is used to spray the PFTE powder over the surface of aluminium with the help of compressor pressure.

iii) Heating Oven – The purpose of heating oven to pretreat the components for heating purpose.

3. **Plastic Injection Moulding Machine** – The main working principle of plastic molding machine is to use the plastic thermal physical properties. First, we auto loader the plastic material into the barrel, which is surround by heating elements melting the plastic. In the barrel which is assembled with servo motor screw. The plastic melt will flow up the screw and under the heating condition get tight and move forward to the screw head. At the same time, due to the plastic reacting force, the screw will step back. So at the screw head, it formed a plastic melt saving space to finish its plasticizing process.

Equipments:

Profile Dies– A die is a specialized tool used in manufacturing industries to cut or shape material mostly using a press.

Conveyor – The rolling conveyors are used to carry the material in coating plant during powder coating process.

Studs, Fasteners, screws –These are used to assemble the laminations core and other auxiliaries to the transformer tank.

PROJECTED CASH FLOW STATEMENT

PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Own Contribution	2.94	-			
Net Profit	0.68	3.95	9.21	14.75	20.63
Depreciation & Exp. W/off	3.43	2.92	2.49	2.12	1.81
Increase In Cash Credit	5.50				
Increase In Term Loan	21.00	-	-	-	-
Increase in Creditors	0.93	0.24	0.26	0.29	0.31
TOTAL :	**34.49**	**7.11**	**11.96**	**17.16**	**22.75**
APPLICATION OF FUND					
Increase in Fixed Assets	23.33	-	-	-	-
Increase in Stock	3.85	0.84	0.97	1.06	1.16
Increase in Debtors	3.26	0.97	0.96	1.04	1.13
Repayment of Term Loan	2.33	4.67	4.67	4.67	4.67
Taxation	-	-	0.21	1.58	3.51
Drawings	0.50	1.50	4.00	8.00	12.00
TOTAL :	**33.28**	**7.98**	**10.81**	**16.35**	**22.46**
Opening Cash & Bank Balance	-	1.21	0.34	1.49	2.30
Add : Surplus	1.21	- 0.87	1.15	0.81	0.29
Closing Cash & Bank Balance	**1.21**	**0.34**	**1.49**	**2.30**	**2.60**

PROJECTED BALANCE SHEET

PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	3.12	5.57	10.57	15.74
Add: Additions	2.94	-	-	-	-
Add: Net Profit	0.68	3.95	9.00	13.17	17.13
Less: Drawings	0.50	1.50	4.00	8.00	12.00
Closing Balance	3.12	5.57	10.57	15.74	20.86
CC Limit	5.50	5.50	5.50	5.50	5.50
Term Loan	18.66	14.00	9.33	4.67	-
Sundry Creditors	0.93	1.18	1.44	1.73	2.04
TOTAL :	**28.22**	**26.24**	**26.84**	**27.63**	**28.40**
APPLICATION OF FUND					
Fixed Assets (Gross)	23.33	23.33	23.33	23.33	23.33
Gross Dep.	3.43	6.36	8.85	10.97	12.78
Net Fixed Assets	19.90	16.97	14.48	12.36	10.55
Current Assets					
Sundry Debtors	3.26	4.23	5.19	6.24	7.37
Stock in Hand	3.85	4.70	5.67	6.73	7.89
Cash and Bank	1.21	0.34	1.49	2.30	2.60
TOTAL :	**28.22**	**26.24**	**26.84**	**27.63**	**28.40**
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	65.25	84.67	103.87	124.76	147.41
Total (A)	**65.25**	**84.67**	**103.87**	**124.76**	**147.41**
B) COST OF SALES					
Raw Mateiral Consumed	39.98	50.36	61.70	74.04	87.45
Electricity Expenses	3.15	3.78	4.41	5.04	5.67
Repair & Maintenance	0.33	0.42	0.52	0.62	0.74
Labour & Wages	8.78	9.66	10.62	11.68	12.85
Depreciation	3.43	2.92	2.49	2.12	1.81
Cost of Production	55.66	67.15	79.74	93.51	108.52
Add: Opening Stock /WIP	-	1.86	2.18	2.58	3.03
Less: Closing Stock /WIP	1.86	2.18	2.58	3.03	3.51
Cost of Sales (B)	53.81	66.82	79.33	93.06	108.03
C) GROSS PROFIT (A-B)	11.44	17.84	24.54	31.69	39.38
	17.54%	**21.07%**	**23.63%**	**25.40%**	**26.71%**
D) Bank Interest (Term Loan)	2.28	1.86	1.35	0.83	0.32
ii) Interest On Working Capital	0.60	0.60	0.60	0.60	0.60
E) Salary to Staff	4.62	5.08	5.59	6.15	6.76
F) Selling & Adm Expenses Exp.	3.26	6.35	7.79	9.36	11.06
TOTAL (D+E)	**10.76**	**13.90**	**15.33**	**16.95**	**18.75**
H) NET PROFIT	0.68	3.95	9.21	14.75	20.63
	1.0%	**4.7%**	**8.9%**	**11.8%**	**14.0%**
I) Taxation	-	-	0.21	1.58	3.51
J) PROFIT (After Tax)	0.68	3.95	9.00	13.17	17.13

COMPUTATION OF ELECTRIC IRON MANUFACTURING UNIT

Items to be Manufactured ELECTRIC IRON

Manufacturing Capacity per Day		100.00	pcs
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		30,000	pcs
Year		Capacity	IRON MANUFACTURING UNIT
		Utilisation	
I		50%	15,000
II		60%	18,000
III		70%	21,000
IV		80%	24,000
V		90%	27,000

COMPUTATION OF RAW MATERIAL

Item Name		**Quantity of Raw Material**	**Unit**	**Unit Rate of**	**Total CostPer Annum (100%)**
Aluminium Billet		**12,000.00**	**kg**	**185.00**	2,220,000.00
PTFE Powder		**4,500.00**	**kg**	**750.00**	3,375,000.00
Heating Element		**30,000.00**	**pcs**	**20.00**	600,000.00
Plastic Resin		**6,000.00**	**kg**	**30.00**	180,000.00
Thermostat		**30,000.00**	**pcs**	**25.00**	750,000.00
Electric Cord		**30,000.00**	**pcs**	25.00	750,000.00
Packing Material					120,000.00
Total		**30,000.00**			**7,995,000.00**

Total Raw material in Rs lacs at 100% Capacity 79.95

Average Cost per PCS (In Rs) **266.50**

Raw Material Consumed	**Capacity Utilisation**	**Rate**	**Amount (Rs.)**
I	50%	266.50	39.98
II	60%	279.80	50.36
III	70%	293.80	61.70
IV	80%	308.50	74.04
V	90%	323.90	87.45

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	I	II	III	IV	V
Finished Goods					
(10 Days requirement)	1.86	2.18	2.58	3.03	3.51
Raw Material					
(20 Days requirement)	2.00	2.52	3.08	3.70	4.37
Closing Stock	**3.85**	**4.70**	**5.67**	**6.73**	**7.89**

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	3.85		
Less:			
Sundry Creditors	0.93		
Paid Stock	**2.92**	**0.29**	**2.63**
Sundry Debtors	3.26	0.33	2.94
Working Capital Requirement			**5.57**
Margin			0.62
MPBF			**5.57**
Working Capital Demand			**5.50**

BREAK UP OF LABOUR

Particulars		Wages Per Month	No of Employees	Total Salary
Plant Operator		15,000.00	1	15,000.00
Unskilled Worker		8,500.00	4	34,000.00
Helper		5,000.00	2	10,000.00
Security Guard		7,500.00	1	7,500.00
				66,500.00
Add: 10% Fringe Benefit				6,650.00
Total Labour Cost Per Month				73,150.00
Total Labour Cost for the year (In Rs. Lakhs)			8	8.78

BREAK UP OF SALARY

Particulars		Salary Per Month	No of Employees	Total Salary
Accountant cum store keeper		10,000.00	1	10,000.00
Administrative Staffs		12,500.00	2	25,000.00
Total Salary Per Month				35,000.00
Add: 10% Fringe Benefit				3,500.00
Total Salary for the month				38,500.00
Total Salary for the year (In Rs. Lakhs)			3	4.62

COMPUTATION OF DEPRECIATION

Description	Land	Building/shed	Plant & Machinery	Furniture	**TOTAL**
Rate of Depreciation			**15.00%**	**10.00%**	
Opening Balance	Own/Rented		-	-	-
Addition	-		22.00	1.33	23.33
	-		22.00	1.33	23.33
TOTAL		-	22.00	1.33	23.33
Less : Depreciation	-	-	3.30	0.13	3.43
WDV at end of Ist year	-	-	18.70	1.20	19.90
Additions During The Year	-	-	-	-	-
	-	-	18.70	1.20	19.90
Less : Depreciation	-	-	2.81	0.12	2.92
WDV at end of IInd Year	-	-	15.90	1.08	16.97
Additions During The Year	-	-	-	-	-
	-	-	15.90	1.08	16.97
Less : Depreciation	-	-	2.38	0.11	2.49
WDV at end of IIIrd year	-	-	13.51	0.97	14.48
Additions During The Year	-	-	-	-	-
	-	-	13.51	0.97	14.48
Less : Depreciation	-	-	2.03	0.10	2.12
WDV at end of IV year	-	-	11.48	0.87	12.36
Additions During The Year	-	-	-	-	-
	-	-	11.48	0.87	12.36
Less : Depreciation	-	-	1.72	0.09	1.81
WDV at end of Vth year	-	-	9.76	0.79	10.55

REPAYMENT SCHEDULE OF TERM LOAN 11.0%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	Cl Balance
I	Opening Balance						
	Ist Quarter	-	21.00	21.00	0.58	-	21.00
	Iind Quarter	21.00	-	21.00	0.58	-	21.00
	IIIrd Quarter	21.00	-	21.00	0.58	1.17	19.83
	Ivth Quarter	19.83	-	19.83	0.55	1.17	18.66
					2.28	2.33	
II	Opening Balance						
	Ist Quarter	18.66	-	18.66	0.51	1.17	17.50
	Iind Quarter	17.50	-	17.50	0.48	1.17	16.33
	IIIrd Quarter	16.33	-	16.33	0.45	1.17	15.16
	Ivth Quarter	15.16		15.16	0.42	1.17	14.00
					1.86	4.67	
III	Opening Balance						
	Ist Quarter	14.00	-	14.00	0.38	1.17	12.83
	Iind Quarter	12.83	-	12.83	0.35	1.17	11.67
	IIIrd Quarter	11.67	-	11.67	0.32	1.17	10.50
	Ivth Quarter	10.50		10.50	0.29	1.17	9.33
					1.35	4.67	
IV	Opening Balance						
	Ist Quarter	9.33	-	9.33	0.26	1.17	8.17
	Iind Quarter	8.17	-	8.17	0.22	1.17	7.00
	IIIrd Quarter	7.00	-	7.00	0.19	1.17	5.83
	Ivth Quarter	5.83		5.83	0.16	1.17	4.67
					0.83	4.67	
V	Opening Balance						
	Ist Quarter	4.67	-	4.67	0.13	1.17	3.50
	Iind Quarter	3.50	-	3.50	0.10	1.17	2.33
	IIIrd Quarter	2.33	-	2.33	0.06	1.17	1.17
	Ivth Quarter	1.17		1.17	0.03	1.17	0.00
					0.32	4.67	

Door to Door Period	60	Months
Moratorium Period	6	Months
Repayment Period	54	Months

CALCULATION OF D.S.C.R

PARTICULARS	I	II	III	IV	V
CASH ACCRUALS	4.11	6.87	11.49	15.29	18.94
Interest on Term Loan	2.28	1.86	1.35	0.83	0.32
Total	6.39	8.73	12.84	16.13	19.26
REPAYMENT					
Repayment of Term Loan	2.33	4.67	4.67	4.67	4.67
Interest on Term Loan	2.28	1.86	1.35	0.83	0.32
Total	4.61	6.53	6.01	5.50	4.99
DEBT SERVICE COVERAGE RATIO	**1.39**	**1.34**	**2.13**	**2.93**	**3.86**
AVERAGE D.S.C.R.			**2.29**		

COMPUTATION OF SALE

Particulars	I	II	III	IV	V
Op Stock	-	500.00	600.00	700.00	800.00
Production	15,000.00	18,000.00	21,000.00	24,000.00	27,000.00
	15,000.00	18,500.00	21,600.00	24,700.00	27,800.00
Less : Closing Stock(10 Days)	500.00	600.00	700.00	800.00	900.00
Net Sale	14,500.00	17,900.00	20,900.00	23,900.00	26,900.00
Avg Sale Price per pcs	450.00	473.00	497.00	522.00	548.00
Sale (in Lacs)	**65.25**	**84.67**	**103.87**	**124.76**	**147.41**

COMPUTATION OF ELECTRICITY

(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		KW	30	
Load Factor				
Electricity Charges		per unit	7.50	
Total Working Days			300	
Electricity Charges				5.40
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			0.5	Hour per day
Total no. of Hour			150	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			1,200	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			0.78	
Add : Lube Cost @15%			0.12	
Total			**0.90**	
Total cost of Power & Fuel at 100%				6.30
Year		**Capacity**		**Amount**
				(in Lacs)
I		50%		3.15
II		60%		3.78
III		70%		4.41
IV		80%		5.04
V		90%		5.67

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