PROJECT REPORT

Of

CAR RADIATOR

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Car Radiator Manufacturing unit.

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	:	xxxxxxxxxxxxxxxxxxxxxx District : xxxxxxx Pin: xxxxxxx State: xxxxx Mobile xxxxxxx
5	Product and By Product	:	**CAR RADIATOR**
6	Name of the project / business activity proposed :		**CAR RADIATOR MANUFACTURING UNIT**
7	Cost of Project	:	Rs.23.44 Lakhs
8	Means of Finance Term Loan Own Capital Working Capital		 Rs.17.1 Lakhs Rs.2.34 Lakhs Rs.4 Lakhs
9	Debt Service Coverage Ratio	:	2.19
10	Pay Back Period	:	5 Years
11	Project Implementation Period	:	5-6 Months
12	Break Even Point	:	26%
13	Employment	:	11 Persons
14	Power Requirement	:	30.00 HP
15	Major Raw materials	:	Copper Sheet, Brass Sheet, Tin, Lead, Other Chemicals and Packing Material
16	Estimated Annual Sales Turnover (Max Capacity)	:	148.07 Lakhs
17	Detailed Cost of Project & Means of Finance		

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Plant & Machinery	18.30
Furniture & Fixtures	0.70
Working Capital	4.44
Total	**23.44**

MEANS OF FINANCE

Particulars	Amount
Own Contribution	2.34
Working Capital(Finance)	4.00
Term Loan	17.10
Total	**23.44**

CAR RADIATOR MANUFACTURING UNIT

Introduction:

A Car radiator is a heat exchanger that's used to lower the temperature of coolant/antifreeze in the engine. Radiators contain narrow tubes that are designed to disperse heat rapidly, helping to maintain the correct operating temperature of the engine. Radiators are cooling devices used in automobiles to prevent engines from overheating. They form the heart of the cooling system in all the vehicles. They're placed at the front of the engine where they're fed by a flow of air, which helps with the cooling process. Primarily, they are responsible for maintaining the temperature of engines so that they can give an optimum performance. Radiators are generally fabricated from copper and brass or aluminum and comprising of numbers of pipes put in a series through which coolant circulates. However, the material of radiator depends on its use. The radiator is an invaluable part of an engine. An automobile engine burns the fuel and creates friction in the process of giving your vehicle the feed it needs. During this process, a large amount of heat is built up in the engine. The heat generated needs to be expelled in order to prevent its internal mechanics from the damage. Due to overheating, the pistons in the engine may seize up causing the engine to break down.

Uses & Market Potential:

Radiators are heat exchangers used for cooling internal combustion engines, mainly in automobiles but also in piston-engine aircraft, railway locomotives, stationary generating plant or any similar use of such an engine. The government of various economies are imposing stringent regulations regarding reduction of carbon emissions from vehicles, which is projected to fuel growth of the automotive radiators market during the forecast period (2017 - 2025). The regulations such as Low Emission Vehicle (LEV) III, Tier 3, and Super Ultra Low Emissions Vehicle (SULEV) are implied to ensure least carbon emissions. Increasing inclination of consumers towards hybrid vehicles, owing to its enhanced power and fuel-efficiency is propelling demand for automotive radiators. Furthermore, hybrid vehicles require additional low temperature heat exchangers for regulated battery cooling along with normal heat exchangers. Therefore, increasing demand for additional low-temperature heat exchangers is projected to drive growth of the automotive radiators market.

Product:

Car Radiator

Raw Material:

The raw materials are mentioned below:

- Copper Sheet
- Brass Sheet
- Tin
- Lead
- Other Chemicals
- Packing Material

Manufacturing Process:

The steps are:

- ✓ Raw material procurement
- ✓ Radiator Core Manufacturing
- ✓ Tube and Fins Production
- ✓ Header Plates Manufacturing
- ✓ Assembly jig
- ✓ Shouldering & Furnace
- ✓ Testing

Area:

The industrial setup requires space for Inventory, workshop or manufacturing area, space for power supply utilities and polishing area. Also, some of the area of building is required for office staff facilities, office furniture, etc. Thus, the approximate total area required for complete industrial setup is 1500-2000Sqft.

Cost of Machines:

Machine	**Quantity**	**Rate**	**Amount**
Tinning Machine	1	150000	150000
Automatic Tube Bending Machine	1	400000	400000
Flat Fin Machine	1	250000	250000
Hydraulic Press	1	200000	200000
Assembly Jig	5	20000	100000
Special Soldering Oven	1	180000	180000

Guillotine Shearing Machine	1	500000	500000
Other Equipment's and tools	-	-	50000
Total Amount			**1830000**

Power Requirement- The estimated Power requirement is taken at 30 HP.

Manpower Requirement– Following manpower is required:

- Machine operator-2
- Skilled/unskilled worker-3
- Helper-4
- Manager cum Accountant-1
- Sales Personnel-1

FINANCIALS

PROJECTED BALANCE SHEET

PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	3.13	5.08	8.05	11.32
Add: Additions	2.34	-	-	-	-
Add: Net Profit	3.58	4.95	6.47	8.27	10.25
Less: Drawings	2.80	3.00	3.50	5.00	6.50
Closing Balance	3.13	5.08	8.05	11.32	15.07
CC Limit	4.00	4.00	4.00	4.00	4.00
Term Loan	15.20	11.40	7.60	3.80	-
Sundry Creditors	2.52	3.00	3.50	4.01	4.55
TOTAL :	**24.84**	**23.47**	**23.14**	**23.13**	**23.61**
APPLICATION OF FUND					
Fixed Assets (Gross)	19.00	19.00	19.00	19.00	19.00
Gross Dep.	2.82	5.21	7.25	8.99	10.47
Net Fixed Assets	16.19	13.79	11.75	10.01	8.53
Current Assets					
Sundry Debtors	3.06	3.79	4.46	5.17	5.92
Stock in Hand	3.90	5.64	6.56	7.52	8.51
Cash and Bank	1.70	0.26	0.37	0.43	0.64
TOTAL :	**24.84**	**23.47**	**23.14**	**23.13**	**23.61**
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	76.56	94.72	111.56	129.34	148.07
Total (A)	**76.56**	**94.72**	**111.56**	**129.34**	**148.07**
B) COST OF SALES					
Raw Material Consumed	50.40	59.98	69.91	80.23	90.92
Elecricity Expenses	2.01	2.35	2.69	3.02	3.36
Repair & Maintenance	1.15	1.42	1.67	1.94	2.22
Labour & Wages	10.21	13.06	15.68	18.18	20.91
Depreciation	2.82	2.40	2.04	1.74	1.48
Cost of Production	66.58	79.21	91.99	105.11	118.89
Add: Opening Stock /WIP	-	2.22	2.64	3.07	3.50
Less: Closing Stock /WIP	2.22	2.64	3.07	3.50	3.96
Cost of Sales (B)	64.36	78.79	91.56	104.67	118.43
C) GROSS PROFIT (A-B)	12.20	15.93	20.00	24.66	29.64
	15.93%	**16.82%**	**17.93%**	**19.07%**	**20.02%**
D) Bank Interest i) (Term Loan)	1.85	1.52	1.10	0.68	0.26
ii) Interest On Working Capital	0.44	0.44	0.44	0.44	0.44
E) Salary to Staff	4.79	6.22	8.09	10.11	12.14
F) Selling & Adm Expenses Exp.	1.53	2.65	3.35	4.14	4.74
G) TOTAL (D+E+F)	**8.61**	**10.83**	**12.98**	**15.37**	**17.58**
H) NET PROFIT	3.58	5.10	7.02	9.29	12.06
	4.7%	**5.4%**	**6.3%**	**7.2%**	**8.1%**
I) Taxation	-	0.15	0.55	1.02	1.81
J) PROFIT (After Tax)	3.58	4.95	6.47	8.27	10.25

PROJECTED CASH FLOW STATEMENT

PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Own Contribution	2.34	-	-	-	-
Reserve & Surplus	3.58	5.10	7.02	9.29	12.06
Depriciation & Exp. W/off	2.82	2.40	2.04	1.74	1.48
Increase In Cash Credit	4.00	-	-	-	-
Increase In Term Loan	17.10	-	-	-	-
Increase in Creditors	2.52	0.48	0.50	0.52	0.53
TOTAL :	**32.36**	**7.98**	**9.56**	**11.54**	**14.07**
APPLICATION OF FUND					
Increase in Fixed Assets	19.00	-	-	-	-
Increase in Stock	3.90	1.74	0.92	0.95	0.99
Increase in Debtors	3.06	0.73	0.67	0.71	0.75
Repayment of Term Loan	1.90	3.80	3.80	3.80	3.80
Taxation	-	0.15	0.55	1.02	1.81
Drawings	2.80	3.00	3.50	5.00	6.50
TOTAL :	**30.66**	**9.42**	**9.45**	**11.49**	**13.86**
Opening Cash & Bank Balance	-	1.70	0.26	0.37	0.43
Add : Surplus	1.70	- 1.44	0.11	0.06	0.22
Closing Cash & Bank Balance	**1.70**	**0.26**	**0.37**	**0.43**	**0.64**

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	I	II	III	IV	V
Finished Goods					
(10 Days requirement)	2.22	2.64	3.07	3.50	3.96
Raw Material					
(10 Days requirement)	1.68	3.00	3.50	4.01	4.55
Closing Stock	**3.90**	**5.64**	**6.56**	**7.52**	**8.51**

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	3.90		
Less:			
Sundry Creditors	2.52		
Paid Stock	**1.38**	**0.14**	**1.24**
Sundry Debtors	3.06	0.31	2.76
Working Capital Requirement			**4.00**
Margin			0.44
MPBF			**4.00**
Working Capital Demand			**4.00**

REPAYMENT SCHEDULE OF TERM LOAN 11.0%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	Cl Balance
I	Opening Balance						
	Ist Quarter	-	17.10	17.10	0.47	-	17.10
	Iind Quarter	17.10	-	17.10	0.47	-	17.10
	IIIrd Quarter	17.10	-	17.10	0.47	0.95	16.15
	Ivth Quarter	16.15	-	16.15	0.44	0.95	15.20
					1.85	1.90	
II	Opening Balance						
	Ist Quarter	15.20	-	15.20	0.42	0.95	14.25
	Iind Quarter	14.25	-	14.25	0.39	0.95	13.30
	IIIrd Quarter	13.30	-	13.30	0.37	0.95	12.35
	Ivth Quarter	12.35		12.35	0.34	0.95	11.40
					1.52	3.80	
III	Opening Balance						
	Ist Quarter	11.40	-	11.40	0.31	0.95	10.45
	Iind Quarter	10.45	-	10.45	0.29	0.95	9.50
	IIIrd Quarter	9.50	-	9.50	0.26	0.95	8.55
	Ivth Quarter	8.55		8.55	0.24	0.95	7.60
					1.10	3.80	
IV	Opening Balance						
	Ist Quarter	7.60	-	7.60	0.21	0.95	6.65
	Iind Quarter	6.65	-	6.65	0.18	0.95	5.70
	IIIrd Quarter	5.70	-	5.70	0.16	0.95	4.75
	Ivth Quarter	4.75		4.75	0.13	0.95	3.80
					0.68	3.80	
V	Opening Balance						
	Ist Quarter	3.80	-	3.80	0.10	0.95	2.85
	Iind Quarter	2.85	-	2.85	0.08	0.95	1.90
	IIIrd Quarter	1.90	-	1.90	0.05	0.95	0.95
	Ivth Quarter	0.95		0.95	0.03	0.95	0.00
					0.26	3.80	

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	6.40	7.35	8.51	10.00	11.73
Interest on Term Loan	1.85	1.52	1.10	0.68	0.26
Total	8.25	8.86	9.61	10.68	11.99
REPAYMENT					
Repayment of Term Loan	1.90	3.80	3.80	3.80	3.80
Interest on Term Loan	1.85	1.52	1.10	0.68	0.26
Total	3.75	5.32	4.90	4.48	4.06
DEBT SERVICE COVERAGE RATIO	**2.20**	**1.67**	**1.96**	**2.39**	**2.95**
AVERAGE D.S.C.R.			**2.19**		

Assumptions:

1. Production Capacity of Car Radiator Manufacturing unit is taken at 40 Units per day. First year, Capacity has been taken @ 30%.

2. Working shift of 10 hours per day has been considered.

3. Raw Material stock and Finished goods closing stock has been taken for 10 days.

4. Credit period to Sundry Debtors has been given for 12 days.

5. Credit period by the Sundry Creditors has been provided for 15 days.

6. Depreciation and Income tax has been taken as per the Income tax Act,1961.

7. Interest on working Capital Loan and Term loan has been taken at 11%.

8. Salary and wages rates are taken as per the Current Market Scenario.

9. Power Consumption has been taken at 30 HP.

10. Selling Prices & Raw material costing has been increased by 3% & 2% respectively in the subsequent years.

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