PROJECT REPORT

Of

ALUMINIUM POWDER

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Aluminium Powder**.

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	:	**ALUMINIUM POWDER**		
6	Name of the project / business activity proposed :		**ALUMINIUM POWDER MAKING UNIT**		
7	Cost of Project	:	Rs.21.22 Lakhs		
8	Means of Finance				
	Term Loan		Rs.12.6 Lakhs		
	Own Capital		Rs.2.12 Lakhs		
	Working capital		Rs.6.5 Lakhs		
9	Debt Service Coverage Ratio	:	2.51		
10	Pay Back Period	:	5	Years	
11	Project Implementation Period	:	5-6	Months	
12	Break Even Point	:	31%		
13	Employment	:	9	Persons	
14	Power Requirement	:	30.00	HP	
15	Major Raw materials	:	Aluminium Ingots		
16	Estimated Annual Sales Turnover (Max Capacity)	:	145.40	Lakhs	
17	Detailed Cost of Project & Means of Finance				

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Plant & Machinery	12.00
Furniture & Fixtures	2.00
Working Capital	7.22
Total	**21.22**

MEANS OF FINANCE

Particulars	Amount
Own Contribution	2.12
Working Capital(Finance)	6.50
Term Loan	12.60
Total	**21.22**

ALUMINIUM POWDER

Introduction: Aluminium powder is a fine granular powder made from Aluminium. In form of powders, Aluminium is used for several applications such as manufacture of slurry, explosive and detonators, thermit process used for manufacture of ferro alloys and for specialised welding applications such as rails, pyrotechnic to manufacture crackers, sparkles and other pyrotechnic products; manufacture of aluminium paste, paints and several powder components used in automobiles. The most important property of aluminium powder to undergo a vigorous exothermic reaction when it gets oxidised finds application in pyrotechnic process. In foundry, aluminium powder is used as a deoxidant and exothermic tapping compounds to increase the yield of casting.

Market Potential: The aluminium powder is a consumable product. Presently there are four major organised manufacturers of aluminium powder. They are Metal Powder Company, Thirumangalam,INDAL, Mumbai, Khosla Metal Powder Company, Pune and Arasan Aluminium Industries, Sivakasi. In addition, there are a number of small scale industries located in Karnataka, M.P., Maharashtra, Gujarat and Delhi with an installed capacity of 1 tonne per day. In a recent report of DSIR, the total production of aluminium powder in the country has been estimated at more than 10,000 MT per year. DGTD has estimated the growth of demand between 8 to 10% per annum. In

conclusion, it can be said that production of aluminium powders of various grades and products such as aluminium paste is well established in the country. The aluminium powder industry is of a remarkable size. There is a growing market for export of aluminium powder and paste. Good opportunities exist in the field of setting up new units in small scale sectors with proven technology and appropriate quality orientation.

Raw material: The only raw material that is used to manufacture aluminium powder is Aluminium Ingots.

Machinery Requirements: Major machines & equipments are as follows:

S No.	Description	Qty.	Amount
1.	Oil Fired Furnace-250 Kg	1	300000
2.	Ball Mill Capacity- 50 Ltr	1	200000
3.	Compressor	1	75000
4.	Hot Air chamber	1	175000
5.	Powder collecting duct complete with suction arrangements etc.	1	150000
6.	Oil Tanker	1	50000
7.	Water Cooling Tank, pumps	Ls	50000
8.	Weighing Platform- 500 Kg Cap.	1	150000
9.	Other equipments & hand tools	Ls	50000
	Total Amount		**1200000**

Manufacturing Process: The aluminium powder is manufactured in several forms such as flake-like particles, granular powder (atomised aluminium) etc. For the production of aluminium powder, there are several processes, one can use any of them. The metal is melted in furnaces and the temperature maintained is around 720°C to 760°C. Atomised Aluminium is produced by blasting the stream of molten Aluminium into small particles by air jet. For this purpose, an atomiser is used which consists of a straight tube

with lower end dipped in molten metal and upper end terminating as a small orifice. A jet of hot air under pressure is passed through armular opening near the top which impinges on a stream of molten Aluminium drawn by suction through the orifice. This leads to the formation of small particles of Aluminium. These particles are drawn by suction, through a collecting duct placed above the nozzle and finally into a cyclone collecting system. The particle size can be controlled to some extent by varying nozzle opening air pressure etc. The different sizes of Aluminium powders are segregated by sieving. Then packing is done as per market requirement for specific 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 to 2000Sqft.

Power Requirement: The power consumption required to run all the machinery could be approximated as 30 Hp

Manpower Requirement: There are requirement of skilled machine operators to run the machine set. Experience quality engineers are required for desired quality control. Some helpers are also required to transfer the material from one work station to other. Office staffs are required to maintain the documentation. The approximate manpower required is 9 including 1 Supervisor, 1 Plant operator, 1 unskilled worker, 2 Helper and 1 Security guard. 3 Skilled worker including Accountant, Manager and Sales person.

Bank Term Loan: Rate of Interest is assumed to be at 11%

Depreciation: Depreciation has been calculated as per the Provisions of Income Tax Act, 1961

Approvals & Registration Requirement:

Basic registration required in this project:

- GST Registration
- Udyog Aadhar Registration (Optional)
- Choice of a Brand Name of the product and secure the name with Trademark if require.
- NOC from State Pollution Control Board

Implementation Schedule:

S No.	Activity	Time required
1.	Acquisition of premises	1-2 Months
2.	Procurement & installation of Plant & Machinery	1-2 Months
3.	Arrangement of Finance	1.5-2 Months
4.	Requirement of required Manpower	1 Month
5.	Commercial Trial Runs	1 Month
	Total time Required (some activities shall run concurrently)	5-6 Months

FINANCIALS

PROJECTED BALANCE SHEET					
PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	4.49	8.23	11.10	14.20
Add: Additions	2.12	-	-	-	-
Add: Net Profit	3.36	4.94	5.87	7.10	8.82
Less: Drawings	1.00	1.20	3.00	4.00	5.00
Closing Balance	4.49	8.23	11.10	14.20	18.02
CC Limit	6.50	6.50	6.50	6.50	6.50
Term Loan	11.20	8.40	5.60	2.80	-
Sundry Creditors	1.44	1.70	1.89	2.08	2.26
TOTAL :	**23.62**	**24.83**	**25.09**	**25.58**	**26.78**
APPLICATION OF FUND					
Fixed Assets (Gross)	14.00	14.00	14.00	14.00	14.00
Gross Dep.	2.00	3.71	5.17	6.42	7.49
Net Fixed Assets	12.00	10.29	8.83	7.58	6.51
Current Assets					
Sundry Debtors	4.32	5.14	5.83	6.54	7.27
Stock in Hand	4.58	6.56	7.36	8.16	8.98
Cash and Bank	2.73	2.83	3.07	3.30	4.03
TOTAL :	**23.62**	**24.83**	**25.09**	**25.58**	**26.78**

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PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	86.30	102.89	116.61	130.78	145.40
Total (A)	**86.30**	**102.89**	**116.61**	**130.78**	**145.40**
B) COST OF SALES					
Raw Material Consumed	61.60	72.77	80.85	88.94	97.02
Elecricity Expenses	1.83	2.05	2.28	2.51	2.74
Repair & Maintenance	1.73	2.06	2.92	3.92	4.36
Labour & Wages	10.33	10.85	13.02	14.97	17.22
Depreciation	2.00	1.71	1.46	1.25	1.07
Cost of Production	77.48	89.44	100.53	111.59	122.41
Add: Opening Stock /WIP	-	2.53	2.93	3.32	3.72
Less: Closing Stock /WIP	2.53	2.93	3.32	3.72	4.13
Cost of Sales (B)	74.96	89.04	100.14	111.19	121.99
C) GROSS PROFIT (A-B)	11.35	13.85	16.47	19.59	23.40
	13.15%	**13.46%**	**14.12%**	**14.98%**	**16.09%**
D) Bank Interest (Term Loan)	1.37	1.12	0.81	0.50	0.19
ii) Interest On Working Capital	0.72	0.72	0.72	0.72	0.72
E) Salary to Staff	5.04	6.05	7.26	8.71	10.02
F) Selling & Adm Expenses Exp.	0.86	1.03	1.17	1.31	1.45
TOTAL (D+E)	**7.98**	**8.91**	**9.95**	**11.23**	**12.38**
H) NET PROFIT	3.36	4.94	6.52	8.35	11.02
	3.9%	**4.8%**	**5.6%**	**6.4%**	**7.6%**
I) Taxation			0.65	1.25	2.20
J) PROFIT (After Tax)	3.36	4.94	5.87	7.10	8.82

PROJECTED CASH FLOW STATEMENT					
PARTICULARS	**I**	**II**	**III**	**IV**	**V**
SOURCES OF FUND					
Own Contribution	2.12	-			
Reserve & Surplus	3.36	4.94	6.52	8.35	11.02
Depriciation & Exp. W/off	2.00	1.71	1.46	1.25	1.07
Increase In Cash Credit	6.50				
Increase In Term Loan	12.60	-	-	-	-
Increase in Creditors	1.44	0.26	0.19	0.19	0.19
TOTAL :	**28.02**	**6.91**	**8.17**	**9.79**	**12.28**
APPLICATION OF FUND					
Increase in Fixed Assets	14.00	-	-	-	-
Increase in Stock	4.58	1.98	0.79	0.81	0.82
Increase in Debtors	4.32	0.83	0.69	0.71	0.73
Repayment of Term Loan	1.40	2.80	2.80	2.80	2.80
Taxation	-	-	0.65	1.25	2.20
Drawings	1.00	1.20	3.00	4.00	5.00
TOTAL :	**25.30**	**6.81**	**7.93**	**9.57**	**11.55**
Opening Cash & Bank Balance	-	2.73	2.83	3.07	3.30
Add : Surplus	2.73	0.10	0.24	0.23	0.73
Closing Cash & Bank Balance	**2.73**	**2.83**	**3.07**	**3.30**	**4.03**

COMPUTATION OF MAKING OF ALUMINIUM POWDER			
Item to be Manufactured Aluminium Powder			
Manufacturing Capacity per day		300	Kg
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		90,000	Kg
Total Production per Annum		90,000	Kg
Year		Capacity Utilisation	ALUMINIUM POWDER
I		40%	36,000.00
II		45%	40,500.00
III		50%	45,000.00
IV		55%	49,500.00
V		60%	54,000.00

COMPUTATION OF RAW MATERIAL					
Item Name		Quantity of Raw Material	Unit	Unit Rate	Total CostPer Annum (100%)
Aluminum Ingots		110.00	MT	1,40,000.00	1,54,00,000.00
Total					**1,54,00,000.00**
Total Raw material in Rs lacs					154.00

Raw Material Consumed	Capacity Utilisation		Amount (Rs.)		
I	40%		61.60		
II	45%		72.77	5% Increase in Cost	
III	50%		80.85	5% Increase in Cost	
IV	55%		88.94	5% Increase in Cost	
V	60%		97.02	5% Increase in Cost	

COMPUTATION OF SALE					
Particulars	**I**	**II**	**III**	**IV**	**V**
Op Stock	-	1,200.00	1,350.00	1,500.00	1,650.00
Production	36,000.00	40,500.00	45,000.00	49,500.00	54,000.00
	36,000.00	41,700.00	46,350.00	51,000.00	55,650.00
Less : Closing Stock(10 Days)	1,200.00	1,350.00	1,500.00	1,650.00	1,800.00
Net Sale	34,800.00	40,350.00	44,850.00	49,350.00	53,850.00
Sale Price per Kg	248.00	255.00	260.00	265.00	270.00
Sale (in Lacs)	**86.30**	**102.89**	**116.61**	**130.78**	**145.40**

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL					
PARTICULARS	I	II	III	IV	V
Finished Goods					
(10 Days requirement)	2.53	2.93	3.32	3.72	4.13
Raw Material					
(10 Days requirement)	2.05	3.64	4.04	4.45	4.85
Closing Stock	**4.58**	**6.56**	**7.36**	**8.16**	**8.98**

COMPUTATION OF WORKING CAPITAL REQUIREMENT			
Particulars	**Amount**	**Margin(10%)**	**Net Amount**
Stock in Hand	4.58		
Less:			
Sundry Creditors	1.44		
Paid Stock	**3.15**	**0.31**	**2.83**
Sundry Debtors	4.32	0.43	3.88
Working Capital Requirement			**6.71**
Margin			0.75
MPBF			**6.71**
Working Capital Demand			**6.50**

BREAK UP OF LABOUR				
Particulars		Wages	No of	Total
		Per Month	Employees	Salary
Supervisor		22,000.00	1	22,000.00
Plant Operator		18,000.00	1	18,000.00
Unskilled Worker		14,000.00	1	14,000.00
Helper		10,000.00	2	20,000.00
Security Guard		8,000.00	1	8,000.00
				82,000.00
Add: 5% Fringe Benefit				4,100.00
Total Labour Cost Per Month				86,100.00
Total Labour Cost for the year (In Rs. Lakhs)			6	10.33

BREAK UP OF SALARY				
Particulars		Salary	No of	Total
		Per Month	Employees	Salary
Manager		18,000.00	1	18,000.00
Accountant cum store keeper		12,000.00	1	12,000.00
Sales		10,000.00	1	10,000.00
Total Salary Per Month				40,000.00
Add: 5% Fringe Benefit				2,000.00
Total Salary for the month				42,000.00
Total Salary for the year (In Rs. Lakhs)			3	5.04

COMPUTATION OF DEPRECIATION				
Description	Land	Plant & Machinery	Furniture	**TOTAL**
Rate of Depreciation		**15.00%**	**10.00%**	
Opening Balance	Leased	-	-	-
Addition	-	12.00	2.00	14.00
	-	12.00	2.00	14.00
		-	-	
TOTAL		12.00	2.00	14.00
Less : Depreciation	-	1.80	0.20	2.00
WDV at end of Ist year	-	10.20	1.80	12.00
Additions During The Year	-	-	-	-
	-	10.20	1.80	12.00
Less : Depreciation	-	1.53	0.18	1.71
WDV at end of IInd Year	-	8.67	1.62	10.29
Additions During The Year	-	-	-	-
	-	8.67	1.62	10.29
Less : Depreciation	-	1.30	0.16	1.46
WDV at end of IIIrd year	-	7.37	1.46	8.83
Additions During The Year	-	-	-	-
	-	7.37	1.46	8.83
Less : Depreciation	-	1.11	0.15	1.25
WDV at end of IV year	-	6.26	1.31	7.58
Additions During The Year	-	-	-	-
	-	6.26	1.31	7.58
Less : Depreciation	-	0.94	0.13	1.07
WDV at end of Vth year	-	5.32	1.18	6.51

REPAYMENT SCHEDULE OF TERM LOAN						11.0%	
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Cl Balance**
I	Opening Balance						
	Ist Quarter	-	12.60	12.60	0.35	-	12.60
	Iind Quarter	12.60	-	12.60	0.35	-	12.60
	IIIrd Quarter	12.60	-	12.60	0.35	0.70	11.90
	Ivth Quarter	11.90	-	11.90	0.33	0.70	11.20
					1.37	1.40	
II	Opening Balance						
	Ist Quarter	11.20	-	11.20	0.31	0.70	10.50
	Iind Quarter	10.50	-	10.50	0.29	0.70	9.80
	IIIrd Quarter	9.80	-	9.80	0.27	0.70	9.10
	Ivth Quarter	9.10		9.10	0.25	0.70	8.40
					1.12	2.80	
III	Opening Balance						
	Ist Quarter	8.40	-	8.40	0.23	0.70	7.70
	Iind Quarter	7.70	-	7.70	0.21	0.70	7.00
	IIIrd Quarter	7.00	-	7.00	0.19	0.70	6.30
	Ivth Quarter	6.30		6.30	0.17	0.70	5.60
					0.81	2.80	
IV	Opening Balance						
	Ist Quarter	5.60	-	5.60	0.15	0.70	4.90
	Iind Quarter	4.90	-	4.90	0.13	0.70	4.20
	IIIrd Quarter	4.20	-	4.20	0.12	0.70	3.50
	Ivth Quarter	3.50		3.50	0.10	0.70	2.80
					0.50	2.80	
V	Opening Balance						
	Ist Quarter	2.80	-	2.80	0.08	0.70	2.10
	Iind Quarter	2.10	-	2.10	0.06	0.70	1.40
	IIIrd Quarter	1.40	-	1.40	0.04	0.70	0.70
	Ivth Quarter	0.70		0.70	0.02	0.70	0.00
					0.19	2.80	

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	5.36	6.65	7.33	8.35	9.89
Interest on Term Loan	1.37	1.12	0.81	0.50	0.19
Total	6.73	7.77	8.14	8.85	10.08
REPAYMENT					
Repayment of Term Loan	1.40	2.80	2.80	2.80	2.80
Interest on Term Loan	1.37	1.12	0.81	0.50	0.19
Total	2.77	3.92	3.61	3.30	2.99
DEBT SERVICE COVERAGE RATIO	**2.43**	**1.98**	**2.26**	**2.68**	**3.37**
AVERAGE D.S.C.R.			**2.51**		

COMPUTATION OF ELECTRICITY				
(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		HP	30	
Load Factor			0.7460	
Electricity Charges		per unit	7.50	
Total Working Days			300	
Electricity Charges				4,02,840.00
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			0.3	Hour per day
Total no of Hour			90	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			720	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			0.47	
Add : Lube Cost @15%			0.07	
Total			**0.54**	
Total cost of Power & Fuel at 100%				4.57
Year		**Capacity**		**Amount**
				(in Lacs)
I		40%		1.83
II		45%		2.05
III		50%		2.28
IV		55%		2.51
V		60%		2.74

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