

PROJECT REPORT

Of

RICE HUSK PARTICLE BOARD MANUFACTURING UNIT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Rice Husk Particle Board 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 GLANCE

1 Name of Proprietor/Director	XXXXXXXXXX
2 Firm Name	XXXXXXXXXX
3 Registered Address	XXXXXXXXXX
4 Nature of Activity	XXXXXXXXXX
5 Category of Applicant	XXXXXXXXXX
6 Location of Unit	XXXXXXXXXX
7 Cost of Project	36.94 Rs. In Lakhs
8 Means of Finance	
i) Own Contribution	3.69 Rs. In Lakhs
ii) Term Loan	29.25 Rs. In Lakhs
iii) Working Capital	4.00 Rs. In Lakhs
9 Debt Service Coverage Ratio	2.12
10 Break Even Point	0.25
11 Power Requirement	30 KW
12 Employment	13 Persons
13 Major Raw Materials	Rice husk, Adhesive Resins etc .
14 Details of Cost of Project & Means of Finance	

Cost of Project		Amount in Lacs
Particulars		Amount
Land	Owned/Rented	
Building & Civil Work	Owned/Rented	
Plant & Machinery		30.00
Furniture & Fixture		1.00
Other Misc Assets		1.50
Working Capital Requirement		4.44
Total		36.94

Means of Finance	
Particulars	Amount
Own Contribution 10%	3.69
Term Loan 90%	29.25
Working capital Loan	4.00
Total	36.94

RICE HUSK PARTICLE BOARD

MANUFACTURING UNIT

1. INTRODUCTION

Rice husk is an agricultural residue. The outer layer of the paddy grain is the rice husk. It is also called rice hull. It is separated from the brown rice in rice mills. Rice husk is produced in the first step in the milling process when the husk is removed from the grain. Around 20% of the paddy weight is husk.

India being an agricultural country, produces tons of rice husk as a by-product every year. This is generally discarded or used as cattle feed. Rice husk is taken as a waste product from rice mills and its properties are determined and checked according to the requirements of the particle board. Rice husk board has a distinct edge over wood-based boards because rice husk is in itself decay resistant. This board has emerged as a versatile substitute for wood in a wide range of applications. Moreover, these boards can also be made decorative. Rice husk particle boards can be manufactured in various densities, thickness and grades to suit wide range of applications. Various different properties of rice husk particle board are:

- Fire Resistance
- Water Resistance
- Termite Resistance
- Decay Resistance
- Borer Resistance



2. MARKET POTENTIAL

The rice husk board is a new product and requires considerable efforts in introducing it into the market. The boards, first introduced in the form of finished product, were later converted into doors, windows and used wherever possible. The boards were also used in partitioning, false ceiling, etc. Also a number of new products were developed to suit the varied applications. The acceptance of the product is increasing day by day. Presently, the boards are marketed through converters who directly use the boards to manufacture finish product. There is a huge demand of particle board in India and all over the world. Particle board market growing very fast. Due to growing deforestation there is bright future of particle board.

3. PRODUCT DESCRIPTION

3.1 PRODUCT USES

Some of the uses of rice husk particle board are:

- Wall Paneling: Medium density boards, both plain and overlaid decorative in any thickness, can be used as wall panels in any situation without fear of decay, insect or termite attack.
- Doors, furniture, windows and table tops: Plain and overload decorative medium density boards can be used instead of wood-based boards.
- Insulation: Low density boards can be used as thermal insulation material in refrigeration and containers.
- General Purpose: These boards are ideally suited for high technological applications such as audio-speakers, air-conditioner decks, auditorium, etc.

3.2 RAW MATERIAL REQUIREMENT

The major raw materials are as follows:

3.2.1 Rice husk

3.2.2 Adhesive Resins

3.3 MANUFACTURING PROCESS

The process of manufacture of rice husk board includes, cleaning of husk as received from the rice mills, wind shifting to remove dirt and stones. The cleaned rice husk is coated with adhesive in a specially designed resin blender. The coated rice husk is spread on mild steel cauls sheets as an even mat. The process is called mat forming. These mats are transferred to hot hydraulic press. The platen of the hydraulic press is heated to desired temperatures and specific pressure is applied for a predetermined period. The boards are taken out from the press and the edges are trimmed to the desired dimensions. The boards may be sanded to obtain smooth finish.

Flow Chart:

- Procurement of Rice Husk
- Cleaning/Winnowing
- Mixer (Resin)
- Mat Formation
- Hot Pressing
- Edge Trimming, sanding, finishing, etc.
- Staking
- Dispatch

4. PROJECT COMPONENTS

4.1 Plant & Machinery

S.N.	Description
1	Sieve Separator
2	Paddle Mixer
3	Mat Forming Machine
4	Hot Press
5	Edge Trimming Machine
6	Cut-off Machine
7	Boards staking Machine
8	Material handling & other equipment's (Silos, storage tanks, weighing machine, water pump, bins, trolleys, etc.)

<u>PROJECTED PROFITABILITY STATEMENT</u>					(in Lacs)
PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Capacity Utilisation %	30%	35%	40%	45%	50%
<u>SALES</u>					
Gross Sale					
RICE HUSK PARTICLE BOARD	73.08	91.96	109.94	129.12	149.50
Total	73.08	91.96	109.94	129.12	149.50
<u>COST OF SALES</u>					
Raw Material Consumed	34.20	42.00	50.40	59.40	69.00
Electricity Expenses	1.89	2.65	3.02	3.40	3.78
Depreciation	4.83	4.11	3.49	2.97	2.53
Wages & labour	12.96	14.26	15.68	17.25	19.84
Repair & maintenance	1.53	2.76	3.30	3.62	4.19
Consumables	1.46	2.57	3.63	4.26	4.93
Packaging	1.61	2.57	3.52	5.16	5.98
Cost of Production	58.48	70.92	83.04	96.07	110.25
Add: Opening Stock	-	1.95	2.36	2.77	3.20
Less: Closing Stock	1.95	2.36	2.77	3.20	3.67
Cost of Sales	56.53	70.50	82.64	95.63	109.78
GROSS PROFIT	16.55	21.46	27.30	33.49	39.72
Gross Profit Ratio	22.65%	23.33%	24.83%	25.93%	26.57%
Salary to Staff	6.36	7.63	8.78	10.09	11.61
Interest on Term Loan	2.87	2.53	1.82	1.10	0.39
Interest on working Capital	0.44	0.44	0.44	0.44	0.44
Rent	2.40	2.76	3.17	3.65	4.20
Selling & Administrative Exp.	0.73	1.10	1.65	2.32	2.69
TOTAL	12.81	14.47	15.86	17.61	19.32
NET PROFIT	3.74	6.99	11.44	15.88	20.40
Taxation	0.06	0.22	0.77	1.21	2.31
PROFIT (After Tax)	3.68	6.77	10.67	14.66	18.09
Net Profit Ratio	5.04%	7.36%	9.71%	11.36%	12.10%

PROJECTED BALANCE SHEET					(in Lacs)
PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
<u>Liabilities</u>					
Capital					
Opening balance		4.58	7.84	14.02	22.38
Add: - Own Capital	3.69				
Add: - Retained Profit	3.68	6.77	10.67	14.66	18.09
Less: - Drawings	2.80	3.50	4.50	6.30	8.00
Closing Balance	4.58	7.84	14.02	22.38	32.47
Term Loan	26.00	19.50	13.00	6.50	-
Working Capital Limit	4.00	4.00	4.00	4.00	4.00
Sundry Creditors	1.71	2.10	2.52	2.97	3.45
Provisions & Other Liability	1.00	1.30	1.56	1.87	2.25
TOTAL:	37.29	34.74	35.10	37.72	42.17
<u>Assets</u>					
Fixed Assets (Gross)					
Gross Dep.	4.83	8.93	12.43	15.40	17.93
Net Fixed Assets	27.68	23.57	20.07	17.10	14.57
Current Assets					
Sundry Debtors	3.65	4.60	5.50	6.46	7.48
Stock in Hand	3.09	3.76	4.45	5.18	5.97
Cash and Bank	2.07	1.81	3.58	6.98	11.85
Loans & Advances	0.80	1.00	1.50	2.00	2.30
TOTAL:	37.29	34.74	35.10	37.72	42.17

PROJECTED CASH FLOW STATEMENT					(in Lacs)
PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
<u>SOURCES OF FUND</u>					
Own Margin	3.69				
Net Profit	3.74	6.99	11.44	15.88	20.40
Depreciation & Exp. W/off	4.83	4.11	3.49	2.97	2.53
Increase in Cash Credit	4.00	-	-	-	-
Increase In Term Loan	29.25	-	-	-	-
Increase in Creditors	1.71	0.39	0.42	0.45	0.48
Increase in Provisions & Oth liabilities	1.00	0.30	0.26	0.31	0.37
	-				
TOTAL:	48.22	11.79	15.62	19.61	23.79
<u>APPLICATION OF FUND</u>					
Increase in Fixed Assets	32.50				
Increase in Stock	3.09	0.67	0.68	0.73	0.79
Increase in Debtors	3.65	0.94	0.90	0.96	1.02
Repayment of Term Loan	3.25	6.50	6.50	6.50	6.50
Loans & Advances	0.80	0.20	0.50	0.50	0.30
Drawings	2.80	3.50	4.50	6.30	8.00
Taxation	0.06	0.22	0.77	1.21	2.31
TOTAL:	46.16	12.04	13.85	16.21	18.92
Opening Cash & Bank Balance	-	2.07	1.81	3.58	6.98
Add : Surplus	2.07	-0.26	1.76	3.41	4.87
Closing Cash & Bank Balance	2.07	1.81	3.58	6.98	11.85

<u>CALCULATION OF D.S.C.R.</u>					
PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
CASH ACCRUALS	8.51	10.87	14.17	17.64	20.62
Interest on Term Loan	2.87	2.53	1.82	1.10	0.39
Total	11.38	13.40	15.99	18.74	21.01
<u>REPAYMENT</u>					
Instalment of Term Loan	3.25	6.50	6.50	6.50	6.50
Interest on Term Loan	2.87	2.53	1.82	1.10	0.39
Total	6.12	9.03	8.32	7.60	6.89
DEBT SERVICE COVERAGE RATIO	1.86	1.48	1.92	2.47	3.05
AVERAGE D.S.C.R.	2.12				

REPAYMENT SCHEDULE OF TERM LOAN							
						Interest	11.00%
Year	Particulars	Amount	Addition	Total	Interest	Repayment	Closing Balance
1st	Opening Balance						
	1st month	-	29.25	29.25	-	-	29.25
	2nd month	29.25	-	29.25	0.27	-	29.25
	3rd month	29.25	-	29.25	0.27	-	29.25
	4th month	29.25	-	29.25	0.27		29.25
	5th month	29.25	-	29.25	0.27		29.25
	6th month	29.25	-	29.25	0.27		29.25
	7th month	29.25	-	29.25	0.27	0.54	28.71
	8th month	28.71	-	28.71	0.26	0.54	28.17
	9th month	28.17	-	28.17	0.26	0.54	27.63
	10th month	27.63	-	27.63	0.25	0.54	27.08
	11th month	27.08	-	27.08	0.25	0.54	26.54
	12th month	26.54	-	26.54	0.24	0.54	26.00
					2.87	3.25	
2nd	Opening Balance						
	1st month	26.00	-	26.00	0.24	0.54	25.46
	2nd month	25.46	-	25.46	0.23	0.54	24.92
	3rd month	24.92	-	24.92	0.23	0.54	24.38
	4th month	24.38	-	24.38	0.22	0.54	23.83
	5th month	23.83	-	23.83	0.22	0.54	23.29
	6th month	23.29	-	23.29	0.21	0.54	22.75
	7th month	22.75	-	22.75	0.21	0.54	22.21
	8th month	22.21	-	22.21	0.20	0.54	21.67
	9th month	21.67	-	21.67	0.20	0.54	21.13
	10th month	21.13	-	21.13	0.19	0.54	20.58
	11th month	20.58	-	20.58	0.19	0.54	20.04
	12th month	20.04	-	20.04	0.18	0.54	19.50
					2.53	6.50	
3rd	Opening Balance						
	1st month	19.50	-	19.50	0.18	0.54	18.96
	2nd month	18.96	-	18.96	0.17	0.54	18.42
	3rd month	18.42	-	18.42	0.17	0.54	17.88
	4th month	17.88	-	17.88	0.16	0.54	17.33
	5th month	17.33	-	17.33	0.16	0.54	16.79
	6th month	16.79	-	16.79	0.15	0.54	16.25
	7th month	16.25	-	16.25	0.15	0.54	15.71
	8th month	15.71	-	15.71	0.14	0.54	15.17
	9th month	15.17	-	15.17	0.14	0.54	14.63
	10th month	14.63	-	14.63	0.13	0.54	14.08
	11th month	14.08	-	14.08	0.13	0.54	13.54
	12th month	13.54	-	13.54	0.12	0.54	13.00
					1.82	6.50	

4th	Opening Balance					
	1st month	13.00	-	13.00	0.12	0.54
	2nd month	12.46	-	12.46	0.11	0.54
	3rd month	11.92	-	11.92	0.11	0.54
	4th month	11.38	-	11.38	0.10	0.54
	5th month	10.83	-	10.83	0.10	0.54
	6th month	10.29	-	10.29	0.09	0.54
	7th month	9.75	-	9.75	0.09	0.54
	8th month	9.21	-	9.21	0.08	0.54
	9th month	8.67	-	8.67	0.08	0.54
	10th month	8.12	-	8.12	0.07	0.54
	11th month	7.58	-	7.58	0.07	0.54
	12th month	7.04	-	7.04	0.06	0.54
					1.10	6.50
5th	Opening Balance					
	1st month	6.50	-	6.50	0.06	0.54
	2nd month	5.96	-	5.96	0.05	0.54
	3rd month	5.42	-	5.42	0.05	0.54
	4th month	4.87	-	4.87	0.04	0.54
	5th month	4.33	-	4.33	0.04	0.54
	6th month	3.79	-	3.79	0.03	0.54
	7th month	3.25	-	3.25	0.03	0.54
	8th month	2.71	-	2.71	0.02	0.54
	9th month	2.17	-	2.17	0.02	0.54
	10th month	1.62	-	1.62	0.01	0.54
	11th month	1.08	-	1.08	0.01	0.54
	12th month	0.54	-	0.54	0.00	0.54
					0.39	6.50
	DOOR TO DOOR	60	MONTHS			
	MORATORIUM PERIOD	6	MONTHS			
	REPAYMENT PERIOD	54	MONTHS			

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