COCONUT SHELL POWDER

1.0 INTRODUCTION

Coconut shell powder is made from coconut shells and is used as a filler in the manufacture of thermoset moulding powders like bakelite, synthetic resin glues or phenol formaldehyde. Availability of adequate quantity of coconut shells is the most critical aspect. It is imperative to locate reliable sources for regular supplies and the location of the factory has to be finalised accordingly. Mesh size of 80-100 is suitable for thermoset moulding powder whereas for synthetic resin glues the size has to be around 230-240 mesh. Product provides substantial value-addition as normally shells are either thrown away or used as a fuel. The preferred locations are Kerala, Goa and Maharashtra.

2.0 PRODUCT

Coconut shell powder is an industrial product and is considered to be suitable and cheap filler compared to others. It is easy to manufacture and results in considerable value-addition.

3.0 MARKET POTENTIAL

Coconut shell powder is mainly used as filler and thus it is an industrial product. It is used in the manufacture of thermoset moulding powders such as phenol formaldehyde moulding powder or bakelite and synthetic resin glues. Powder of different particle size is required for different end-uses. It would be better if the promoters have relevant marketing background. India has maintained fairly steady industrial growth during last 8-10 years. Indian economy is gradually coming out of the grips of demand recession and industrial production is once again picking up. Yet another favourable aspect of coconut shell powder is that it is a comparatively cheaper filler and hence preferred by many end-users.

4.0 MANUFACTURING PROCESS

It is not very complicated. Coconut shells are cleaned and broken manually into small pieces and then fed into pulveriser. Powder obtained from pulveriser is fed into rotor lift, coiled and passed through dresser to have required mesh size. Rejects from the dresser are recycled. Efficient pulverising and screening are critical aspects. Recovery is around 90%.

5.0 CAPITAL INPUTS

5.1 Land and Building

Land of 200 sq.mtrs. with built up area of 100 sq.mtrs. shall be adequate. Spare land can be utilised for storage of coconut shells. Land may cost Rs.60,000/- whereas cost of construction could be Rs.2.50 lacs.

5.2 Machinery

Production capacity has to be determined after assessing availability of coconut shells but the minimum viable size has to be to process 600 tonnes every year with 2 shift working and 300 working days. This would call for installation of following machinery.

Item	Qty.	Price (Rs.)
Pulveriser with electric motor and accessories	1	1,50,000
Centrifugal screen with Electric Motor and accessories	1	75,000
Rotor lift with Electric Motor	1	35,000
Laboratory Equipments	--	20,000
Weighing Scales etc.	--	15,000
	Total	**2,95,000**

5.3 Miscellaneous Assets

Some other assets like furniture & fixtures, tools, material handling equipments etc. shall be required for which a provision of Rs. 40,000/- is made.

5.4 Utilities

Power requirement shall be 50 HP whereas water required every day shall be around 1500 ltrs.

5.5 Raw and Packing Materials

The only raw material required will be coconut shells. Monthly requirement at 100% activity level shall be 50 tonnes which is not a small quantity. Proper assessment and arrangements must be made to ensure adequate regular supply. Powder can be packed in gunny bags with liner inside.

6.0 MANPOWER REQUIREMENTS

Particulars	Nos.	Monthly Salary (Rs.)	Total Monthly Salary (Rs.)
Machine Operator	1	3,500	3,500
Skilled Workers	2	2,500	5,000
Unskilled Workers	5	1,250	6,250
Salesman	1	3,000	3,000
		Total	**17,750**

7.0 TENTATIVE IMPLEMENTATION SCHEDULE

Activity	Period (in months)
Application and sanction of loan	2
Site selection and commencement of civil work	1
Completion of civil work and placement of orders for machinery	4
Erection, installation and trial runs	1

8.0 DETAILS OF THE PROPOSED PROJECT

8.1 Land and Building

Particulars	Area (Sq.Mtrs)	Cost (Rs.)
Land	200	60,000
Building	100	2,50,000
	Total	**3,10,000**

8.2 Machinery

Total cost of machinery is expected to be Rs.2.95 lacs as discussed earlier.

8.3 Miscellaneous Assets

A provision of Rs.40,000/- is made which would take care of expenditure under this head.

8.4 Preliminary & Pre-operative Expenses

There will be many pre-production expenses like registration, establishment and administrative charges, travelling expenses, interest during implementation, trial run expenses and so on for which a provision of Rs. 60,000/- is made.

8.5 Working Capital Requirements

In the first year at 60% capacity utilisation, the working capital needs would be as under.

(Rs. in lacs)

Particulars	Period	Margin	Total	Bank	Promoters
Stock of Raw Materials	1 Month	30%	1.30	0.90	0.40
Stock of Finished Goods	½ Month	25%	0.90	0.70	0.20
Receivables	1 Month	25%	2.00	1.50	0.50
Working Expenses	1 Month	100%	0.35	--	0.35
		Total	**4.55**	**3.10**	**1.45**

8.6 Cost of the Project & Means of Financing

(Rs. in lacs)

Item	Amount
Land and Building	3.10
Machinery	2.95
Miscellaneous Assets	0.40
P&P Expenses	0.60
Contingencies @ 10% on Land and Building & Plant & Machinery	0.60
Working Capital Margin	1.45
Total	**9.10**
Means of Finance	
Promoters' Contribution	2.80
Term Loan from Bank/FI	6.30
Total	**9.10**
Debt Equity Ratio	2.25 : 1
Promoters' Contribution	31%

Financial assistance in the form of grant is available from the Ministry of Food Processing Industries, Govt. of India, towards expenditure on technical civil works and plant and machinery for eligible projects subject to certain terms and conditions.

9.0 PROFITABILITY CALCULATIONS

9.1 Production Capacity & Build-up

As against the yearly rated capacity of 600 tonnes, actual utilisation in the first year is assumed to be 60% and second year onwards it is taken at 75%.

9.2 Sales Revenue at 100%

Assuming selling price of Rs. 7,500/- per ton and recovery of 90%, the annual turnover at 100% would be Rs. 40.50 lacs.

9.3 Raw and Packing Materials Required at 100%

Price of coconut shells is assumed to be Rs.4000/- per ton and thus cost of 600 tonnes would be Rs.24.00 lacs. Per ton packing material cost would be Rs.400/- and hence cost of packing materials for 540 tonnes would be Rs.2.16 lacs.

9.4 Utilities

Annual cost of utilities at 100% activity level would be Rs.80,000/-.

9.5 Interest

Interest on term loan of Rs. 6.30 lacs is calculated @ 12% per annum assuming complete repayment in 3 years including a moratorium period of 6 months whereas on working capital loan it is computed @ 14% per annum.

9.7 Depreciation

It is calculated @ 10% on building and 20% on machinery and miscellaneous assets on WDV basis.

10.0 PROJECTED PROFITABILITY

(Rs. in lacs)

No.	Particulars	1st Year	2nd Year
A	**Installed Capacity**	**--- 600 Tonnes ---**	
	Capacity Utilisation	60%	75%
	Sales Realisation	24.30	30.40
B	**Cost of Production**		
	Raw and Packing Materials	15.70	19.60
	Utilities	0.48	0.60
	Salaries	2.13	2.40
	Stores and Spares	0.30	0.45
	Repairs & Maintenance	0.42	0.60
	Selling & Admn. Expenses @ 5%	1.21	1.52
	Total	**20.24**	**25.17**
C	**Profit before Interest & Depreciation**	**4.06**	**5.23**
	Interest on Term Loan	0.61	0.34
	Interest on Working Capital	0.43	0.54
	Depreciation	0.92	0.75
	Profit before Tax	2.10	3.60
	Income-tax @ 20%	0.42	0.72
	Profit after Tax	1.68	2.88
	Cash Accruals	2.60	3.63
	Repayment of Term Loan	1.15	2.30

11.0 BREAK-EVEN ANALYSIS

(Rs. in lacs)

No	Particulars		Amount
[A]	**Sales**		**24.30**
[B]	**Variable Costs**		
	Raw and Packing Materials	15.70	
	Utilities (70%)	0.34	
	Salaries (70%)	1.50	
	Stores & Spares	0.30	
	Selling & Admn. Expenses (50%)	0.60	
	Interest on WC	0.43	**18.87**
[C]	**Contribution [A] - [B]**		**5.43**
[D]	**Fixed Cost**		**3.33**
[E]	**Break-Even Point [D] ÷ [C]**		**61%**

12.0 [A] LEVERAGES

Financial Leverage

= EBIT/EBT

= 3.14 ÷ 2.10

= 1.50

Operating Leverage

= Contribution/EBT

= 5.43 ÷ 2.10

= 2.57

Degree of Total Leverage

= FL/OL

= 1.50 ÷ 2.57

= 0.58

[B] Debt Service Coverage Ratio (DSCR)

(Rs. in lacs)

Particulars	1st Yr	2nd Yr	3rd Yr
Cash Accruals	2.60	3.63	4.11
Interest on TL	0.61	0.34	0.15
Total [A]	**3.21**	**3.97**	**4.26**
Interest on TL	0.61	0.34	0.15
Repayment of TL	1.25	2.50	2.55
Total [B]	**1.86**	**2.84**	**2.70**
DSCR [A] ÷ [B]	**1.72**	**1.40**	**1.58**
Average DSCR	**---------- 1.57 ----------**		

[C] Internal Rate of Return (IRR)

Cost of the project is Rs. 9.10 lacs.

(Rs. in lacs)

Year	Cash Accruals	24%	28%	32%
1	2.60	2.10	2.03	1.97
2	3.63	2.36	2.21	2.08
3	4.11	2.15	1.96	1.79
4	4.52	1.91	1.69	1.49
5	4.96	1.69	1.44	1.24
	19.82	**10.21**	**9.33**	**8.57**

The IRR is around 29%.

Some of the machinery suppliers are

1. D P Pulversier Works, 12, Nagindas Master Road, Fort, Mumbai 400 001
2. T. Alimohammad & Co, MJ Phule Market, Mumbai 400 003
3. Apurva Engg. Works, Boriwali, Mumbai 400 098
4. Europack Machines (India)Pvt. Ltd., 52, Bindal Estate, Saki naka, Mumbai-400072. Tel No. 28526477