

PROJECT PROFILE

ON

SMOKELESS CHULHAS

PART-I

NAME OF THE PRODUCT : **SMOKELESS CHULHAS**

QUALITY & STANDARD : IS: 2062 for Steel.

PRODUCTION CAPACITY : The production capacity of the unit at 75% capacity utilisation.

Item	Quantity	Amount (In Rs.)
Smokeless Chulhas	1250 Nos.	50,00,000/-

MONTH & YEAR OF PREPARATION : July, 2012.

PREPARED BY : **Mechanical Division**
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SMOKELESS CHULHAS

PART-II

A) INTRODUCTION

Smokeless Chulhas are commonly used in houses, canteens, hotels etc. for cooking purpose. These are gaining more popularity in rural and semi-urban areas where firewood is generally used as the fuel. Coconut husks, leaves, firewood, coconut shell, etc., which are easily available in rural and semi-urban areas can be economically used in houses, hotels etc., for cooking purposes.

The main advantage of installing smokeless chulha is that it does not emit smoke in the kitchen and make the area smokeless unlike the conventional type country oven. The construction of the oven is such that the entire smoke generated while burning the fuel is taken through a pipe and discharged into the atmosphere at a higher level. Thus an air draft is created and it helps smooth burning of the fuel. The ovens are so designed that flames are not directed outside and thus more heat is absorbed by the vessel giving more fuel economy.

Smokeless chulhas can be constructed in different models and sizes. The standard family unit is with 3 ovens, size 9", 8" and 7" diameters. A cast iron reducer plate is also supplied to accommodate smaller vessels. In this oven firing is made only in two ovens at a time. The third oven gets heat from the flame of these two ovens and it is normally used for warming water, food etc., only. Firing can be done in one oven also

depending on the use. In such cases the passage to the unused oven should be closed by using the shutter supplied with the unit. The ovens which are not in use should be covered with the lid/cover.

Depending on the requirement, two oven, three oven, four oven, five oven chulhas and low cost clay ovens can also be constructed.

B) MARKET POTENTIAL

Smokeless Chulhas are gaining popularity in rural and semi-urban areas due to its slow cost and use of readily available fuel. The non-availability of Kerosene and LPG easily has also forced many LPG consumers for installing smokeless chulhas as a standby cooking source. There is only one unit in Kerala manufacturing improved type of smokeless chulhas. Sasthra Sahitya Parishath has introduced low cost clay smokeless oven. Creating awareness among the rural people will create very good market for this product. The promoter may have to conduct open house discussions, demonstrations, show rooms etc., to give wide publicity of the product among the people.

C) BASIS & PRESUMPTIONS

1. The project Profile has been prepared on the basis of single shift of 8 hours each day, 25 days in a month and at 75% efficiency.
2. It is presumed that in the first year the capacity utilization will be 60% followed by 70% in the next year and 80% in the subsequent years.
3. The rates of salaries and wages for skilled workers and others are the minimum rates in the State/Neighbouring States.
4. Interest rate for fixed and working capital has been taken on an average rate of 13% whether financed by bankers or by Financial Corporations.
5. Margin money required is minimum 30% of the project investment.

6. The estimated life of the project can be taken up as 10 years considering the standard norms, technology, consumer demand etc.
7. The rental value of the workshed and other built up /covered area has been taken at the rate of more than Rs. 50.00 per sq. mtr.
8. The rates quoted in respect of machines, equipment and raw materials are those, prevailing at the time of preparation of this Project Profile and are likely to vary from supplier to supplier and place to place. When a tailor made project profile is prepared necessary changes are to be made.

D) IMPLEMENTATION SCHEDULE:

The implementation of the project may require about 6 months for getting into commercial production.

E) TECHNICAL ASPECTS:

(i) Process of Manufacture:

Manufacturing process is completed in two stages (a) Manufacture of Metallic Plate and cover / lids for oven in the factory (b) Installation work of the oven in the site.

(a) Manufacture of Metallic Plate and cover / lids for oven in the factory:

In a standard family unit of 3 ovens of 9", 8" and 7" diameters are normally fitted. Cast Iron Plates having the size holes in the centre are procured from foundry units. Mild steel sheet covering is made to these plates using press brake. Holes are also cut in the sheet to suit the cast iron Mild steel sheet is placed above the cast iron plate and the gap is filled with fire clay paste. The sheet and cast iron plate is held in position by bolting. Then the assembled unit is painted.

Cover / Lid for the oven is made from mild steel sheet to keep the oven closed when it is not in use. An asbestos sheet is fitted o the top of the exhaust pipe to prevent entry of water into the pipe during rains. This sheet is supported with the pipe by using mild steel frame suitably made for the purpose. Shutters for the oven are also made from mild steel sheet.

(b) Installation work of the oven in the site:

The installation work requires the following items for a standard unit of 3 ovens.

- | | |
|---|----------|
| 1. Cement | ½ bag |
| 2. Wire cut bricks | 50 Nos. |
| 3. Flooring tiles | 40 Nos. |
| 4. Soil pipe 6" dia Or
Asbestos pipes 6" dia required height | 6 Nos. |
| 5. ¼" dia wire rods, granite metal, sand etc. These items
have to be supplied by the customer at the site. | 3 months |

The installation requires special skill for obtaining maximum efficiency of the oven. Therefore, normally the manufacturer is employing the skilled workers for this purpose.

The passages from one oven to the other and the exhaust pipe are also to be made carefully to correct sizes and to maintain required distance. Arrangements are also made to close the passages of individual ovens which are not in use. Necessary shutters are provided for this purpose.

(ii) Quality Control and Standards

Care should be taken while installing the oven. The passages from one oven to other and exhaust pipe are also to be made carefully. The number of ovens may be increased as per the requirement of the customer.

(iii) Production Capacity:

Item	Quantity	Amount (In Rs.)
Smokeless Chulhas	1250 Nos.	50,00,000/-

Approximate Motive Power required: 6 K.W.

(iv) Pollution Control:

This industry does not produce any waste or effluents which attract pollution control measures.

(v) Energy Conservation:

The unit is equipped with very low powered equipment. The energy conservation effort needed in this unit is the creation of awareness among the workers.

F) FINANCIAL ASPECTS:**A) Fixed Capital:****(i) Land & Building:***Built up area 100 sq. mtrs. (Rented) p.m.***6,000/-****(ii) Machinery & Equipment:**

Sl. No	Item	Qty. (Nos.)	Amount (In Rs.)
1.	Hand operated press brake with bending dies with 4 grooves and bending blade capacity 4 ft X 14 SWG	1	15,000/-
2.	Geared type hand lever shearing machine capacity to cut 3 mm thick plate, length of blade 500 mm	1	35,000/-
3.	Arc welding transformer 200 amps air cooled with standard set of welding accessories such as electrodes holder, earth clamp, wire brush, hand screen with glass, chipping hammer, cables for holder and earth.	1 set	25,000/-
4.	Bench drilling machine 13 mm cap. With 0.5 HP motor	1	25,000/-
5.	Bench Grinder 200 mm wheel size with 0.75 HP motor	1	12,000/-
6.	Portable electric drill 6 mm capacity	1	13,000/-
7.	Workshop tools and equipment		30,000/-
8.	Erection and installation charges		30,000/-
	Total:		3,20,000/-
	Pre-operative expenses		30,000/-
	Grand Total:		3,50,000/-

B) Working Capital (Per Month):**(i) Personnel:**

Sl. No.	Designation	No.	Salary	Total (Rs.)
1.	Manager	1	15000	15,000/-
2.	Skilled Workers	2	6000	12,000/-
3.	Semi-Skilled Workers	4	4000	16,000/-
4.	Unskilled Workers	1	3000	3,000/-
5.	Clerk/Typist/Store Keeper	1	3000	3,000/-
	Total:			49,000/-
	Add Perquisites @ 15% of salary			7,000/-
	Total:			56,000/-

(ii) Raw Materials including Packaging Requirements(P.M.):

Sl. No.	Particulars	Qty. MT	Rate	Amount (In Rs.)
1.	Cast Iron Casting	3 MT	42000/MT	1,47,000/-
2.	Mild Steel Sheet 14 SWG	800 Kg	56/Kg	44,800/-
3.	Mild Steel Flat Rods, Asbestos Sheet, Paint, Bolt, Nuts, Welding Rods, Fire Clay etc.			25,200/-
	Total:			2,17,000/-

(iii) Utilities:

1.	Electricity and Water Charges p.m.	7,000/-
	Total:	7,000/-

(iv) Other Contingent Expenses (P.M.):

1	Rent	6,000/-
2	Publicity and Sales expenses	13,000/-
3	Postage, Stationery, Telephone etc.	3,000/-
4	Transportation & Travelling	3,000/-
5	Miscellaneous Expenses	5,000/-
	Total:	30,000/-

(v) Working Capital / Total Recurring Expenditure (P.M.):

1.	Personnel	56,000/-
2.	Raw Materials	2,17,000/-
3.	Utilities	7,000/-
4.	Other Contingent Expenses	30,000/-
	Total:	3,10,000/-

(vi) Total working capital for 3 months $3,10,000 \times 3 = \text{Rs.}9,30,000/-$ **C) TOTAL CAPITAL INVESTMENT:**

I.	Fixed Capital	3,50,000/-
II.	Working Capital for 3 months	9,30,000/-
	Total:	12,80,000/-

Machinery utilization:

75% capacity utilization is needed to attain the proposed production.

G) FINANCIAL ANALYSIS:**i) Cost of Production (Per annum)**

Sl. No.	Particulars	Value(Rs.)
1.	Working Capital	37,20,000/-
2.	Depreciation on machinery and equipment @ 10%	30,000/-
3.	Depreciation on Tools, equipment, furniture etc. @ 20%	6,000/-
4.	Interest on Total Capital Investment @ 15%	1,94,000/-
Total: -		39,50,000/-

ii) Turnover (Per Annum)

Sl. No.	Item	Quantity	Rate (Rs.)	Value (Rs.)
1.	By sale of Smokeless Chulhas	1250 Nos.	4,000/-	50,00,000/-

iii) NET PROFIT (Per annum) Before Taxation:

Turn Over	(-)	Cost of Production	=	10,50,000/-
50,00,000/-	(-)	39,50,000/-		

iv) PROFIT RATIO ON SALES (Per Annum):

<u>Profit/annum X 100</u>	<u>10,50,000/- X 100</u>	=	21%
Turnover/Annum	50,00,000/-		

v) RATE OF RETURN (Per Annum):

<u>Net Profit/annum X 100</u>	<u>10,50,000/- X 100</u>	=	82%
Total Capital Investment	12,80,000/-		

BREAK EVEN POINT**Fixed Cost:**

1.	Total Depreciation	Rs.	36,000/-
2.	Rent	Rs.	72,000/-
3.	Interest	Rs.	1,94,000/-
4.	40% of Salary & Wages	Rs.	2,69,000/-
5.	40% utility	Rs.	33,600/-
6.	40% of other contingent expenses (excluding rent)	Rs.	14,400/-
	Total:-	Rs.	6,19,000/-

B.E.P.

Fixed Cost X 100	6,19,000/- X 100	=	37.08%
Fixed Cost + Profit	6,19,000/- + 10,50,000/-		

Additional Information:

The unit can take up the manufacture and installation of biogas plants and solar cookers.

Address of Machinery & Equipment Suppliers:

1. M/s India Machine Tools Cocmpany,
Post Box No. 1781, Pulikka Building,
M.G. road, Ernakulam,
Cochin -682016.
2. M/s Equipment Agencies,
Kallai Road,
Calicut, Kerala State.
3. M/s Machine Tool Traders (Chennai),
Post Box. No.1260,
218, Lingh Chetty Street,
Chennai-600001.
4. M/s Mechelec Engineers,
G.P.O. Box No. 1868,
75/77, Nagindas Master Road,
Mumbai-400023.

Suppliers of Raw Materials:

Local Foundry units and raw material dealers.