Domestic LPG Stove

PRODUCT CODE	:	340504005
QUALITY AND STANDARDS	:	IS 4246 : 1984 for LPG Stove
	:	IS 11480:1985 for LPG Grillers
	:	IS 5116:1985 for General requirements for domestic and commercial equipment with LPG
PRODUCTION CAPACITY	:	Qty. : 30,000 Nos. (per annum) Value : Rs. 1,36,50,000
MONTH AND YEAR OF PREPARATION	:	April, 2003
PREPARED BY	:	Small Industries Service Institute 107, Indl. Estate, Kalpi Road, Kanpur-208012 Phone Nos. 295070-73 Fax. : 0512-220831 Website: www.sisikanpur.com

Introduction

L.P.G is the most convenient and clean fuel for domestic use and is very popular in these days. The LPG stove industry is about 36 years old and is mainly concentrated in the small-scale sector. LPG is a by product formed during petroleum distillation and is stored and marketed in gas cylinders of 14.2 KG capacity and used generally for cooking stoves and to some extent for industrial purpose also. The domestic LPG stove is primarily being used in the urban areas as well as in rural areas. The industry of domestic LPG stove has grown considerably over the last 18 years and offers a wide range of products i.e.:

i) Gas stove with one burner,
ii) Gas stove with two burners,
iii) Gas stove with two burners, one grill also called as cooking grill,
iv) Gas stove with three burners,
v) Gas stove with four burners etc.

Market Potential

In 1980, the Government of India had planned to push the exploration and production of LPG from Bombay High Project, thereby providing tremendous push to the LPG Stove Industry. More and more number of new connections are being released by the Govt. and therefore the demand of LPG stove is also increasing day by day. As per the last Census, there were 186, units manufacturing LPG stoves in India. Out of them, 139 were from SSI sector. Most of the units are located in the state of Delhi and Haryana.

BASIS AND PRESUMPTIONS

1. The basis for calculation of production capacity is on single shift, working of 25 days per month on 75% efficiency. The time period required for achieving envisaged capacity utilization is assumed as one year.
2. Break-even Point for the scheme has been calculated on full capacity utilization.
3. Rate of interest has been taken @ 16% on an average. This, however, is likely to change depending upon the location of the project.
4. Labour wages have been taken on the basis of minimum applicable. These are likely to change depending upon the location of the project.
5. Rental charges of Rs. 40 per Sq. Mtr. per month have been taken on an average. This figure is likely to vary depending upon the location of the unit.
6. Margin money requirement differs from project to project and type of entrepreneurs such as women, SC/ST, physically handicapped etc. and the minimum margin money usually asked by the financial institutions and banks is 15%. Margin money up to 25% in some cases is also asked. The entrepreneurs may check the margin money requirement from financial institutions for the project.
7. Terms of loan differ from one financial institution to another and in general minimum gestation period is 6 months and it could be 2 years also. Maximum period for repayment of loan is 7 years including gestation period. The entrepreneurs may find the exact terms and conditions from the concerned financial institutions .
8. The cost of machinery and equipments as indicated in the scheme is approximate ruling at the time of preparation of the scheme. The entrepreneur may check the exact price for specific make and model of the machine selected.
9. Non-refundable deposits, cost of preparation of project report etc. may be considered under pre-operative expenses.
10. The provision made in other respects viz; raw materials, utilities, overheads etc. is drawn on the basis of standard variation and output. The cost indicated against each is approximate based upon local market conditions and observations. The entrepreneur may find out the exact cost from the concerned sources.
11. The operative period of this project is estimated to be about 10 years considering technology obsolescence.
12. Calculations are based on manufacture of double burner stove only.

IMPLEMENTATION SCHEDULE

It is envisaged that from the conception to commercial production, it may take about one and half years,

which also includes time for preparation of project report, provisional registration, procurement of Machinery and Equipments, their installation and electrification, clearance from all local authorities, obtaining loan from financial institutions. However, the duration for implementation of project/unit may vary depending upon the circumstance.

TECHNICAL ASPECTS

Process of Manufacture

C.R. sheet is to be cut according to the desired length and width on the guillotine-shearing machine. Then it has to be fed in the double action deep draw press for giving shape of the body of LPG stove. The holes may be cut on power press in the body and burr must be removed. After that, the small holes may be done on drilling machine. Then it may be sent for Ni-crome plating from outside of MC Limit. Then all bought out components like burners, burner tops, pan supporting casting, Gas pipe assembly, gas cook assembly knobs, rubber rolls and name plates etc. are to be fitted on the body. Finally the stove must be tested as per ISI mark requirement and packed for despatching/selling.

Quality Control and Standards

The LPG stove may be manufactured and checked according to IS 4246:1984, IS 11480:1985 and IS 5116:1985. The following testing facilities are required for getting ISI certification mark:

i) Strength testing equipment.

ii) Thermal efficiency apparatus.

iii) Combustion apparatus.

iv) Gas soundness testing equipment.

v) Floor wall and ceiling temperature-measuring equipment.

vi) Gas consumption testing apparatus.

Production Capacity (per annum)

Quantity	Value
30,000 Nos.	Rs. 1,36,50,000

Motive Power 50 KW.

Pollution Control

No pollution control is required in the unit as the unit has to get nickel crome plating from outside. However, the general feature for pollution control must be taken into consideration during the process of the unit.

Energy Conservation

General precautions must be taken into consideration to conserve energy such as shunt capacitors must be used on electric motors and carbide gas must be used with due care while welding and general lighting system.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building	(In Rs.)
Covered area 200 Sq. mtr. on Rent @ Rs. 40 per Sq.mtr. (per month) (200 × 40)	8000

(ii) Machinery and Equipment

Sl. No.	Description	Ind./ Imp.	Qty.	Amount (In Rs.)
1.	Treadle guillotine shearing machine cap. 1250×1.6 mm with 3 HP motor and accessories	Ind	1	1,00,000
2.	Double action deep draw press No.6 with 15 HP motor and accessories	Ind	1	8,00,000

Sl. No.	Description	Ind./ Imp.	Qty.	Amount (In Rs.)
3.	Power press cap. 100 tonne with 10 HP motor and accessories	Ind.	1	3,00,000
4.	Power press cap. 50 tonne with 5 HP motor and accessories	-do-	1	2,00,000
5.	Circle cutting machine cap. 50mm dia with one HP motor and accessories	-do-	1	25,000
6.	Bench drilling machine cap. up to 20 mm with 1 HP motor and accessories	-do-	1	20,000
7.	Double ended bench grinder 200 mm wheel size with 0.5 HP motor and accessories	-do-	1	8,000
8.	Flexible shaft grinder	-do-	1	5,000
9.	Edge folding press No. 12	-do-	1	25,000
10.	Fly press No. 4	-do-	1	10,000
11.	Gas welding set complete with all accessories	-do-	1	12,000
12.	Portable drilling machine 12 mm cap. with motor	-do-	2	5,000
13.	Spot welding set 15 KW	-do-	1	50,000
14.	Electric welding set cap. 300 amp	-do-	1	5,000
		Total		15,65,000
	Cost of power connection			15,500
	Electrification and installation charges @ 10% of the cost of machinery			1,56,500
	Office furniture racks etc.			20,000
	Measuring instruments and testing apparatus etc.			50,000
	Tools dies and fixtures etc.			50,000
(iii)	Pre-operative Expenses			43,000
	Total Fixed Capital (ii+iii)			Rs.19,00,000

B. Working Capital (per month)

(i) Salary and Wages

Sl. No.	Designation	Nos.	Salary (Rs.)	Amount (In Rs.)
a.	*Administration*			
i.	Sales-cum-Marketing Manager	1	8000	8000
ii.	Clerk-cum-Typist	1	2500	2500
iii.	Accountant-cum-Cashier	1	3500	3500
iv.	Chowkidar/Peon	2	2000	4000
v.	Sweeper (part time)	1	1000	1000
b.	*Technical*			
i.	Engineer	1	6000	6000
ii.	Supervisor	1	5000	5000
iii.	Skilled Workers	4	3000	12000
iv.	Semi-skilled Workers	3	2500	7500
v.	Helper	1	2000	2000
		Total		51,500
	Perquisites @15%			7,725
		Total		59,225

(ii) Raw Material (per month)

Sl. No.	Particulars	Rate (Rs.)	Qty.	Amount (In Rs.)
a.	CR sheet 1.00 mm thickness (20 SWG)	20000/ tonne	10 tonne	200000
	Bought out Components			
b.	Burners and burners tops (ISI mark)	50/set	2500 pair	1,25,000
c.	Pan supporting casted rings	12/set	2500 set	30,000
d.	Gas pipe assembly	20	2500 nos.	50,000

Sl. No.	Particulars	Rate (Rs.)	Qty.	Amount (In Rs.)
e.	Gas cock assembly ISI mark	80/pair	2500 pair	2,00,000
f.	On and off knob	5/pair	2500 Nos.	12,500
g.	Name plates	1each	2500 Nos.	2,500
h.	Card board boxes for packing	12/box	2500 Nos.	30,000
			Total	6,50,000

(iii) Utilities (per month)	(In Rs.)
Power -7500 kWH @ Rs. 4/unit	30,000
Water - LS	500
Total	30,500

(iv) Other Contingent Expenses (per month)		(Rs.)
i.	Rent	8,000
ii.	Telephone	500
iii.	Postage and Stationery	500
iv.	Transport Charges	2,500
v.	Repair and Maintenance	2,500
vi.	Nickel crome plating charges 2500 × 60	1,50,000
vii.	Consumables like carbide, gas welding rods, oxygen gas etc.	5,000
viii.	Advertisement and Publicity	1,000
ix.	Insurance	1,500
x.	Miscellaneous/sales Expenses	3,500
	Total	1,75,000

(v) Total Recurring Expenditure (per month)
(i + ii + iii + iv) = Rs. 914725

Say = Rs. 915000

(vi) Total Working Capital *(for 3 months)*
Rs. 915000 × 3 = Rs. 2745000

C. Total Capital Investment

(1) Fixed Capital	Rs. 19,00,000
(2) Working Capital (for 3 months)	Rs. 27,45,000
Total	Rs. 46,45,000

MACHINERY UTILISATION

The number of machines to be installed has been determined in such a way that planned schedule of process will not cause any bottleneck in operation during bulk production. As such the unit will make utilization of machinery envisaged.

FINANCIAL ANALYSIS

(1) Cost of Production (per annum)		(Rs.)
i.	Total recurring cost	1,09,80,000
ii.	Depreciation on machinery @ 10%	1,56,500
iii.	Depreciation on office furniture @ 20%	4,000
iv.	Depreciation on dies, tools and fixture @ 25%	12,500
v.	Depreciation on measuring and testing apparatus @ 10%	5,000
vi.	Interest on Total Capital Investment @ 16%	7,43,200
	Total	1,19,01,200
	Say	1,19,01,000

(2) Turnover (per year) Rs. 13650000

By sales of 30,000 domestic LPG stoves @ Rs. 455 per stove

(3) Net Profit (per year)
Turnover - Cost of Production = Rs. 17,49,000

(4) Net Profit Ratio

$$= \frac{\text{Net profit} \times 100}{\text{Turn over}}$$

$$= \frac{17,49,000 \times 100}{1,36,50,000}$$

$$= 12.8\%$$

(5) Rate of Return

$$= \frac{\text{Net profit} \times 100}{\text{Total Capital Investment}}$$

$$= \frac{17,49,000 \times 100}{46,45,000}$$

$$= 37.6\%$$

(6) Break-even Point

Fixed Cost	(Rs.)
1. Total Depreciation	1,78,000
2. Total interest	7,43,200
3. Insurance	18,000
4. Rent	96,000
5. 40% of Salaries	2,47,200
6. 40% of other contingent expenses	74,400
Total	13,56,800

$$B.E.P. = \frac{\text{Fixed cost} \times 100}{\text{Fixed cost + profit}}$$

$$= \frac{13,56,800 \times 100}{13,56,800 + 1749000}$$

$$= 43.7\%$$

Addresses of Machinery Suppliers

1. M/s. Essential Machine Tools (P) Ltd.
   5, Nyayamurthi, G.N Vaidya Marg,
   Post Box No. 2,
   Behind State Bank, Fort,
   Mumbai-400001
2.. M/s. Dutta Engg. Works
   C-162, Mayapuri Indl. Area,
   Phase-II,
   New Delhi.
3. M/s. JNW Engineers
   Commercial Complex,
   Mayapuri Indl. Area, Phase-I,
   New Delhi.
4. M/s. United Machine Co.
   B-96, Mayapuri Indl. Area,
   New Delhi.
5. M/s. Prem Engg. Works
   20, Okhla Indl. Area,
   New Delhi-110020.
6. M/s. Patel Indl. Corporation
   2-B, DLF Indl. Area,
   Nazafgarh Road,
   New Delhi.
7. M/s. Mahalaxmi Engg. Works
   20, DLF Indl. Area,
   Nazafgarh Road,
   New Delhi.
8. M/s. Simplicity Engineers
   B-99, Mayapuri Indl. Area,
   New Delhi.
9. M/s. Atlas Engg. Works
   G. T. Road,
   Batala
10. M/s. P. K. Engg. Works
    B-1, Indl. Estate,
    Aligarh.
11. M/s. S.S. Mechanical Works
    Indl. Estate–B,
    Ludhiana.

Raw Material Suppliers

Raw Material can be purchased from local market, as it is available easily. Moreover, it can also be had from the Government Depots and Corporations.