

Ice Cream Churner

| | |
|-----------------------|--|
| PRODUCT CODE (ASICC) | 77741 |
| QUALITY AND STANDARDS | As per Customer's Specification |
| Production Capacity | Quantity: 300 Nos. (per annum) Value : Rs. 156,00,000 |
| YEAR OF PREPARATION | 2002 _ 2003 |
| PREPARED BY | Small Industries Service Institute Kanjany Road, Ayyanthole Thrissur-68003 and Office of the Development Commissioner Small Scale Industries Electrical and Electronics Division, 7th Floor, Nirman Bhavan, New Delhi-110 011. |

Introduction

Ice cream churner is used to make ice cream. Mixed ingredients are fed into the churner and the churner is operated to get the ice cream.

Market Potential

Now due to the increased living standard of the people the food habit of the people is changing. More people have started consuming ice creams. Entrepreneurs can start a unit for making and selling ice cream under PMRY scheme also.

Basis and Presumptions

- i) The basis for calculation of production capacity has been taken on single shift basis on 75% efficiency.
- ii) The maximum capacity utilization on single shift basis for 300 days a year. During first year and second year of operations the capacity utilization is 60% and 80% respectively. The unit is expected to achieve full capacity utilization from the third year onwards.

- iii) The salaries and wages, cost of raw materials, utilities, rents, etc. are based on the prevailing rates in and around Thrissur. These cost factors are likely to vary with time and location.
- iv) Interest on term loan and working capital loan has been taken at the rate of 15% on an average. This rate may vary depending upon the policy of the financial institutions/agencies from time to time.
- v) The cost of machinery and equipments refer to a particular make/model and prices are approximate.
- vi) The break-even point percentage indicated is of full capacity utilization.
- vii) The project preparation cost etc. whenever required could be considered under pre-operative expenses.
- viii) The essential production machinery and test equipment required for the project have been indicated. The unit may also utilize common test facilities available at Electronics Test and Development Centres (ETDCs) and Electronic Regional Test Laboratories (ERTLs) and Regional Testing Centres (RTCs).

Implementation Schedule

The major activities in the implementation of the project has been listed and the average time for implementation of the project is estimated at 12 months:

| <i>Sl.No.</i> | <i>Activity</i> | <i>Period (In Months)</i> |
|---------------|--|---------------------------|
| 1. | Preparation of project report | 1 |
| 2. | Registration and other formalities | 1 |
| 3. | Sanction of loan by financial institutions | 3 |
| 4. | Plant and Machinery: | |
| | a) Placement of orders | 1 |
| | b) Procurement | 2 |
| | c) Power connection/Electrification | 2 |
| | d) Installation/Erection of machinery/Test Equipment | 2 |
| 5. | Procurement of raw materials | 2 |
| 6. | Recruitment of Technical Personnel etc. | 2 |
| 7. | Trial production | 11 |
| 8. | Commercial production | 12 |

Notes

1. Many of the above activities shall be initiated concurrently.

2. Procurement of raw materials commences from the 8th month onwards.
3. When imported plant and machinery are required, the implementation period of project may vary from 12 months to 15 months.

Technical Aspects

Process of Manufacture

The manufacturing process consists of mounting, compressor, churner, fan motor in an angle iron fabricated structure. Wiring is carried out and side panels made of stainless steel is fixed to the structure. Functional test is carried out.

Production Capacity (per annum)

Quantity : 300 Nos.

Value : Rs. 1,56,00,000

Motive Power 15 kW.

Pollution Control

The Government accords utmost importance to control environmental pollution. The small-scale entrepreneurs should have an environmental friendly attitude and adopt pollution control measures by process modification and technology substitution.

India having acceded to the Montreal Protocol in September 1992, the production and use of Ozone Depleting Substances (ODS) like Chlorofluore Carbon (CFCs), Carbon Tetrachloride, Halons and methyl Chloroform etc. need to be phased out immediately with alternative chemicals/solvents. A notification for detailed Rules to regulate ODS phase out under the Environment Protection Act, 1986 have been put in place with effect from 19th July 2000.

Energy Conservation

With the growing energy needs and shortage coupled with rising energy cost, a greater thrust in energy efficiency in industrial sector has been given by the Government of India since 1980s. The Energy Conservation Act, 2001 has been enacted on 18th August 2001, which provides for efficient use of energy, its conservation and capacity building of Bureau of Energy Efficiency created under the Act.

The following steps may help for conservation of electrical energy:

- i) Adoption of energy conserving technologies, production aids and testing facilities.
- ii) Efficient management of process/manufacturing machineries and systems, QC and testing equipments for yielding maximum Energy Conservation.

iii) Optimum use of electrical energy for heating during soldering process can be obtained by using efficient temperature controlled soldering and de-soldering stations.

iv) Periodical maintenance of motors, compressors etc.

v) Use of power factor correction capacitors. Proper selection and layout of lighting system; timely switching on-off of the lights; use of compact fluorescent lamps wherever possible etc.

Financial Aspects

A. Fixed Capital

(i) Land and Building

The unit will be working in a rented premises of approximate built up area of 2000 Sq. meter The monthly rental will be approximately Rs. 4,000

(ii) Machinery and Equipments

| Sl. No. | Description | Qty. | Total(Rs.) |
|--------------|---|-----------------|------------|
| 1. | Hand operated Sheet Bending machinery | 1 | 67,000 |
| 2. | Guillotine shearing machine 1200 mm | 1 | 22,500 |
| 3. | Drilling m/c. 15 mm capacity (Bench Type) | 1 | 4,600 |
| 4. | Drilling m/c. 15 mm capacity (Pillar Type). | 1 | 22,000 |
| 5. | Arc welding Transformers 300 Amps. | 1 | 24,500 |
| 6. | Bench Grinder 200 mm. dia. wheels | 1 | 3,800 |
| 7. | Hand shearing m/c. | 1 | 13,000 |
| 8. | Power hacksaw | 1 | 30,000 |
| 9. | Flexible shaft grinder | 1 | 6,500 |
| 10. | Portable drilling m/c. 15 mm. capacity | 1 | 3,500 |
| 11. | Fly Press No. 8 | 1 | 14,500 |
| 12. | Tools, dies etc. | L.S. | 40,000 |
| 13. | Bridge Meggas 500 VDC | 1 | 7,500 |
| 14. | Multimeter | 1 | 3,000 |
| 15. | Portable precision grade ammeter 0-20 Amps. | 1 | 2,000 |
| 16. | Portable Precision grade Voltmeters 0-500V | 1 | 2,000 |
| Total | | 2,66,400 | |
| b. | Erection and installation charges | | 26,640 |
| c. | Furniture and Office equipments | | 20,000 |

| | | |
|----|------------------------|--------|
| | including work benches | |
| d. | Pre-operative expenses | 10,000 |
| e. | Tools, dies etc. | 20,000 |

Total Fixed Capital **3,43,040**

B. Working Capital

(i) Personnel (per month)

| Sl. | Designation | Nos. | Salary (Rs.) | Total (Rs.) |
|-----|----------------------|------|-----------------|----------------|
| 1. | Manager | 1 | 8,000 | 8,000 |
| 2. | Skilled Workers | 3 | 5,000 | 15,000 |
| 3. | Semi-skilled workers | 3 | 4,000 | 12,000 |
| 4. | Clerk | 1 | 4,000 | 4,000 |
| | <i>Perks @ 15%</i> | | | 5,850 |
| | Total | | | 44,850 |

Say 45,000

(ii) Raw Materials (per month)

| Sl. No. | Description | Qty. | Rate (Rs.) | Value (Rs.) |
|---------|--------------------------------------|-----------|---------------|----------------|
| 1. | Stainless Steel Sheet 20 SWG. 8'x20' | 78 Kg. | 210/ Kg. | 16,380 |
| 2. | Thermostatic expansion valve | 25 Nos. | 4,000 | 1,00,000 |
| 3. | Angle Iron | 500Kg. | 17/Kg. | 8,500 |
| 4. | Churner | 25 Nos. | 12,000 each | 3,00,000 |
| 5. | Condensor coil | 25 Nos. | 2,000 each | 50,000 |
| 6. | Pulley Set | 12" & 2½" | | |
| 7. | 1 HP 3phase motor | 25 Nos. | 300 each | 75,000 |

| | | | |
|---|------|-----------------|-----------------|
| 8. Compressor 3/4 tonne | 25 | 9,000 | 2,25,000 |
| | Nos. | each | |
| 9. Fan Motor 400W | 25 | 600 | 15,000 |
| | Nos. | each | |
| 10. Air Compressor ½ HP | 25 | 4,000 | 1,00,000 |
| | Nos. | each | |
| 11. Electrical fittings, Hardware | 25 | 1,000/ sets. | 25,000 |
| | | set | |
| 12. Packing materials | L.S. | 2,500 | 2,500 |
| Total | | | 9,17,380 |
| Say | | | 9,17,500 |
| (iii) Utilities (per month) | | | (Rs.) |
| a Power | | | 7,000 |
| b Water | | | 100 |
| Total | | | 7,100 |
| (iv) Other Contingent Expenses (per month) | | | (Rs.) |
| a) Rent | | | 4,000 |
| b) Postage and Stationery | | | 1,500 |
| c) Telephone | | | 1,000 |
| d) Consumable stores | | | 2,000 |
| e) Repairs and maintenance | | | 2,000 |
| f) Transportation charges | | | 5,000 |
| g) Advertisement and Publicity | | | 10,000 |
| h) Sales expenses | | | 10,000 |
| Total | | | 35,500 |
| (v) Total Recurring Expenditure (per month) | | | (Rs.) |
| (i + ii + iii + iv) = 45,000 + 9,17,500 + 7,100 + 35,500 | | | 10,05,100 |

(vi) Total Working Capital (for 3 months) Rs. 30,15,300

C. Total Capital Investment

| | |
|----------------------|----------------------|
| (i) Fixed Capital | Rs. 3,43,040 |
| (ii) Working Capital | Rs. 30,15,300 |
| Total | Rs. 33,58,520 |

Financial Analysis

| | |
|--|--------------|
| (1) Cost of Production (per year) | (Rs.) |
| Total recurring cost | 1,20,61,200 |
| Depreciation on machinery and equipments @ 10% | 28,650 |
| Depreciation on tools moulds and fixtures @ 25% | 5,000 |
| Interest on total investment @ 15% | 5,03,750 |

Total **1,25,98,600**

(2) Turnover (per year)

By sale of 300 ice cream churners **1,36,50,000**

@ Rs. 45,500 each

(3) Net Profit (per year)

1,36,50,000 - 1,25,98,600 = Rs. 1,05,1,400

(4) Net Profit Ratio

= $\frac{\text{Net profit per year} \times 100}{\text{Turnover per year}}$

= $\frac{1051400 \times 100}{1,36,50,000}$

1,36,50,000

= 7.77%

(5) Rate of Return

= $\frac{\text{Net Profit per year} \times 100}{\text{Total Investment}}$

Total Investment

= $\frac{1051400 \times 100}{3358340}$

3358340

= 31.30%

(6) Break-even Point

(i) Fixed Cost

(Rs.)

a) Depreciation on Machinery and Equipments

28,650

b) Depreciation on office equipment

5,000

c) Depreciation on tools

5,000

d) Rent

48,000

e) Interest on total investment

5,03,750

f) 40% of salary and wages

2,16,000

g) 40% of other contingent expenses other than rent

1,51,200

Total

9,57,600

(ii) Net Profit (per year) = Rs. 16,51,400

B.E.P.

$$\begin{aligned} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}} \\ &= \frac{9,57,600 \times 100}{9,57,600 + 1,05,1,400} \\ &= \frac{9,57,600 \times 100}{20,09,000} \end{aligned}$$

= **47.67%**

Additional Information

a. The Project Profile may be modified/tailored to suit the individual entrepreneurship qualities/capacity, production programme and also to suit the locational characteristics, wherever applicable.

b. The Electrical Technology is undergoing rapid strides of change and there is need for regular monitoring of the national and international technology scenario. The unit may, therefore, keep abreast with the new technologies in order to keep them in pace with the developments for global competition.

c. Quality today is not only confined to the product or service alone. It also extends to the process and environment in which they are generated. The ISO 9000 defines standards for Quality Management System and ISO 14001 defines standards for Environmental Management System for acceptability at international level. The unit may therefore adopt these standards for global competition.

d. The margin money recommended is 25% of the working capital

requirement at an average. However, the percentage of margin money may vary as per bank's discretion.

Addresses of Machinery and Test Equipment Suppliers

1. M/s. Equipment Agencies

1062, Bharathiar Road, P. N. Palayam,
Coimbatore-37

2. M/s. Machine Tools Traders (Madras)
218, Linchi Chetty Street,
Post Box No. 1260, Chennai-600 001

3. M/s. Venkateswara Engg. Works
54, Mettupalayam Road, Coimbatore-11

4. M/s. Grindex Engg. Co

229, V. K. Road, Peelamedu,
Coimbatore-4

5. M/s. Guru Instruments and Spares
M. G. Road, Ernakulam-682016

6. M/s. Cool Tech
Door No. 39/3854, S. A. Road,
Cochin-682016

Raw Material Suppliers

1. M/s. Chilton Refrigeration Industries
P. B. No. 3560, 38/114, M. G. Road,
Cochin

2. M/s. Cool Tech
Door No. 39/3854, S. A. Road, Cochin-682 016