



PROJECT PROFILE ON ELECTRIC SOLAR COOLER

Product Name	Electric Solar Cooler
HSNCode	84185000
Product Specification	220 Volt, AC, Single phase
Production Capacity (Per Annum)	4800 pieces
Investment Value (In Rs Per Annum)	346 Lacs
Month & Year of Preparation	April-2018
Prepared By	D K Tyagi Asstt. Director (Electronics) MSME- Development Institute 11-A, IDC , Kunjpura Road, Karnal Haryana- 0184-2208110,101

1. INTRODUCTION

Electric Solar Cooler as the names suggest is essentially and New concept of a domestic appliance intended for Cooling in the Summer season It is operated electrically as well as Sun light also. Electric Solar Cooler is an essential appliances to save the electric energy, it is basic need where the electric energy is not available, as in Small Towns and Rural Areas it bi-purpose device, it may run by Solar as well as Electric Energy . Electric Solar Cooler is operated at 220 volts A. C., single phase and By DC at 24 V which may charge by 25W Solar Panel it will be available in three different rated speeds such.

2. MARKET POTENTIAL

As it is a new concept in India and it save the electric energy it will basic need of this country because there is a major shortage of electric energy. The Models may be possible in the Portable sizes also, So that it may easy to carry at office,shops, as well as in to another . This by itself is bound to increase demand for electrical saving appliance, in future.

3. 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 Haryana. 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 13% on an average. This rate may vary depending upon the policy of the financial 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 production machinery and tes equipment required for the project have been indicted. The unit may also utilize common test facilities available at Electronics Test and Development Centres (ETDCs) and Electronic Regional Test Laboratories (ERTLs) and MSME Testing Centers (MSME-TCs).

4. 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:

S. No.	Name of Activity	Estimated Period in months
1	Preparation of project report	01 Month
2.	Registration and other formalities	01 Month
3.	Sanction of loan by financial institutions	03 Month
4.	Plant and Machinery:Placement of orders	01 Month
5.	Procurement	02 Month
6.	Installation / Erection of machinery	01 Month
7	Procurement of raw materials	02 Month
8	Recruitment of Technical Staff	01 Month
9	Trial	11th Month
10	Commercial Service	12 th Month

Notes-:

- Many of the above activities shall be initiated concurrently.
- Procurement of raw materials commences from the 10th month onwards.
- All the plants and machinery required are available in ready stock.,
- The implementation period of project may vary from 12th month to 13th month.

5 TECHNICAL ASPECTS

I. Process of Manufacture: As per the required specification and design, the plastic graduals in different varieties has to arrange and different sizes dies and moulds for bodies, as portable stable, and there finishing of all the parts. Checking of all the parts and fitting as electrical switches, sides of Cooler body, Solar Panel, battery Leads connection wiring done fitted at proper places and necessary etc. After complete manufacturing of various parts and components the Electric Solar Cooler is assembled, tested and packed...

II. Quality Control and Standards: As per IS

III. Production Capacity (Per Annum) :

- Quantity : 4800 Nos. (Per Annum) --ELECTRIC SOLAR COOLER
- Value : Rs. 43,488,000 @Rs.9060/

IV. Motive Power : 10 K.W.

v. Pollution Control:

The Government accords utmost importance to control environmental pollution. The small-scale entrepreneurs should have and 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 Chlorofluoro Carbon (CFCs), Carbon Tetrachloride, Halons and Methyl Chloroform etc. need to be phased out immediately with altenative chemicals/solvents. A notification from detailed rules to regulate ODS phase out under the Environment Protection Act,1986 have been put in place with effect from 19th July 2000.

- In Electronic industry fumes and gases are released during hand soldering/wave soldering/Dip soldering, which are harmful to people as well as environment and the end products. Alternate technologies may be used to phase out the existing pollution technologies. Numerous new fluxes have been developed containing 2-10% solids as opposed to the traditional 15-35% solids.
- Electronic industry uses CFCs, carbon Tetrachloride and Methyl Chloroform for cleaning of printed circuit boards after assembly to remove flux residues left after soldering, and various kinds of foams for packaging.

Many alternative solvents could replace CFC-113 and Methyl Chloroform in electronics cleaning. Other Chlorinated solvents such as trichloroethylene, per chloroethylene and methylene chloride have been used as effective cleaners in electronics industry for many years. Other organic solvents such as ketones and Alcohols are effective in removing both solder fluxes and many polar contaminants.

VI 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 Govt. 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 & 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 desoldering stations.
- iv) Periodical maintenance of motor 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 whenever possible etc.

5. FINANCIAL ASPECTS

A) Fixed Capital

1) **Land Building rent (per month)** 25,000

2) **Machinery and equipment**

Machine name	Qty	Rate	Value
Bench vise	2	7,000	14000
Cooling ducts	3	12,000	36000
Drilling Machine 1/2" cap.	1	15,000	15000
H. V. tester	1	10,000	10000
Ammeter and Voltmeter	2	1,700	3400
megger	1	5,000	5000
solar battery connectors	2	1500	3000
multimeters	1	2,500	2500
wattmeter	1	4000	4000
Variable transformer (8amp)	1	6,000	6000
			0
			0
Total			98900

3) **Other fixed assets**

Electrification charges @10% of cost of machinery & equipment	9,890
Office equipment, furniture & working table	70,000
Dies 3 types	2,00,00,000
Finishing tools and cutting tools	6,000
Pre operative expenses	12000
Total fixed capital	2,00,97,890
Total fixed capital	2,01,96,790

B) Working Capital

1) Staff and Labour

Designation	No	Salary	Total
Factory manager	1	25,000	25000
Accountant	1	12,000	12000
Peon	2	8000	16000
Skilled worker	2	12,000	24000
<u>Semi skilled worker</u>	4	9,000	36000
Total			113000
Prerequisite @15% on total salary			16950
Total			129950

2) Raw material (per month)

Particular	Qty	Rate	Cost
Plastics graduals(in kg)	1000	150	150000
Packing Tape (no)	100	15	1500
Speed Switches, Pump Switches(no)	300	10	3000
Fan Motor(no)	250	400	100000
Pump Motor(no)	250	1000	250000
Screw nuts, washers steel spring rod etc.(in kg)	250	50	12500
Wiring sets	300	35	10500
Cable 3-core complete with 3 mtrs(sets)	300	40	12000
Packages(box)	300	100	30000
Solar Panels 25 watts(no)	200	4000	800000
Battery 36 AH (as use in car)(no)	300	2000	600000
Misc			20,000
Total			1989500

3) Utilities(per month)

	Power	10,000
	Water	3500
	Fuel for generator	10,000
	Total	23,500

4) Contingent Expenses(per month)

	Rent	25000
	Postage and stationery	2000
	Telephone / Telex/Fax charges	5000
	Advt. and publicity	15,000
	Miscellaneous expenditure	5,000
	Total	52000

5) total recurring expenses (per month)

	Staff and labour	129950
	Raw materials	1989500
	Utilities	23,500
	Contingent expenses	52000
	Total recurring expenses	2194950

6) Total working capital for 3 months

3x recurring
expenses

6584850

c) Total capital investment

	Machinery & equipment	2,01,96,790
	Working capital for 3 months	6584850
	Total	26781640

Machinery utilization

75% of installed capacity

Financial Aspects

Cost of production (per annum)

Recurring expenses	12x RE per month	26339400
Depreciation on machinery	10% on M/C cost	9890
depreciation on fixed assetes and furniture	20% on furniture	4019578
Interest on total investment	14% on working capital	4285062.4
Total		34653930.4

Turn over per annum by sales

Product	Qty	rate	Value
Electric solar cooker	400	9,060	3624000
Total			3624000
Total turn over per month			43488000

Net profit per year

Sales value - cost of production

43488000-34653930= 8834069.6

Net profit Ratio:

8834069*100/43488000= 20.31380979

Rate of return on inestment:

8834069*100/34653930= 25.49225874

Break even point analysis:

Fixed cost (per annum)

Rent	25000*12	360000
Depreciation	10% of M/C	2019679
Interest on capital investment		4285062.4

40% of wages of staff and labour		623760
40% of other contingent expenses		249600
		7538101.4

$$7538101 * 100 / (7538101 + 8834069) =$$

$$46.04216142\%$$

ADDITIONAL INFORMATION

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

b. The electrical/Solar 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 no 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 Systems and ISO 11 14001 defines standards for Environmental Management System for acceptability at international level. The unit 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.

e) The raw material is easily available at the electrical/ electronics shops.