PROJECT PROFILE
ON
REPAIR & SERVICING OF ELECTRICAL APPLIANCES

PRODUCT CODE (ASICC)	:	97115
QUALITY STANDARDS	:	As per customer's Requirement
SERVICING CAPACITY	:	Qty : 4800 Nos. per annum Value : Rs. 10,00,000
YEAR OF PREPARATION	:	2006-07
PREPARED / UPDATED BY	:	MSME - Development Institute Ministry of MSME Govt. of India, Vikash Sadan, College Square, Cuttack-753003 (Orissa) Phone No.-0671-2648049, 2648077 Telefax-0671-2332307

1. INTRODUCTION:

To-day, the "Electrical Industry" has a pride place in "Indian Manufacturing Industry". It has advanced through technical collaborations, joint ventures and indigenous research and development, comprising of diverse products ranging from electric generators, transformers, to house hold electrical Appliances and gadgets, etc. The electrical appliances like mixer/ grinder, Geysers, water heater, fan, Iron, etc. are widely used in almost every household. The major manufacturers are Usha, Bajaj, Crompton, Onida, Videocone, LG etc. These electrical appliances do need periodic servicing, maintenance and repair actively. Though there are a number of authorized repair & servicing centers, provided by the authorized dealers network but still there is wide spread need of the repair & servicing centers to cater the need of repair and servicing activity for these appliances specially in semi-urban and rural areas.

2. MARKET POTENTIAL:

This will be a service-oriented industry to cater to the needs of the repair & servicing of Electrical Appliances. There is hardly any household which does not posses these items. In course of time, these items/ appliances need periodic servicing and repair requirement, therefore, there is a tremendous scope for the growth of these repair & servicing centers, specially in semi-urban and Rural Areas, which can be undertaken by the educated-unemployed youths of the area with a little skill development without much capital requirement.

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 is 60% during first year, 80% during second year of operation. The unit is expected to achieve full capacity utilization from the third year onwards.

iii) The Salaries and wages cost of raw materials, utilities, rent of the shed etc. are based on the prevailing rates in and around Cuttack. These cost factors are likely to vary with time and with location.

iv) Interest on term loan and capital loan has been taken at the rate of 16% on an average. This rate may vary depending upon the policy of the financial institutions and agencies from time to time.

v) The cost of machinery and equipments refer to a particular make/model and the prices is approximate.

vi) The project preparation cost etc. whenever required may be considered under the head of pre-operative expenses.

vii) The Break Even Point indicated is of full capacity utilization.

viii) The essential production machinery and test equipment required for the project has been indicated. The unit may also utilize common testing facilities available at Electronics test & Development centres (ETDCs) and Electronies Regional Test Laboratories (ERTLs) and Regional Testing Centres (RTCs)

Implementation Schedule

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

		Period (in month) (Suggestive)
1.	Preparation of Project Report	1
2.	Registration & Other Formalities	1
3.	Sanction of Loan by Financial Institutions	3
4.	Plant and Machinery :- a) Placement of Orders b) Procurement c) Power Connection / Electrification d) Installation / Erection of Machinery/Test Equipment	 1 2 2 2
5.	Procurement of Raw Materials	2
6.	Recruitment of Technical Personnel etc.	2
7.	Trial Production	11
8.	Commercial Production	12

NOTE:

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:

1. Process of Servicing

Basically the process of repairing and servicing of Electrical Appliances would be servicing in nature. The periodic servicing of the appliances can be carried out at a time interval as and when the customer brings the Appliances for servicing. The Appliances *i.e.* electric fans, mixer, Geysers, Iron etc. which is completely de-assembled after overhaulirig and replacing worn out parts, changes

of ball bearings, etc. and lubrication the appliance is re-assembled and tested, On the other hand, under repairing activity, after testing and fault diagnosing, the repair activity can be carried out by rectifications or replacement of worn out/defective item, etc. Apart from these, the winding of armature of the motorized appliances can also be carried out.

2. QUALITY STANDARDS

As per customer's requirement

3. PRODUCTION CAPACITY PER ANNUM :

QUANTITY	:	4,8,00 Nos. Repair & Serving per annum
VALUE	:	Rs. 10,00,000/-

4. MOTIVE POWER : 5 KVA.

5. 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 Chlorofluoro 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.

The following steps are suggested which may help to control pollution in electronics Industry wherever applicable:

i) 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 polluting technologies. Numerous new fluxes have been developed containing 2-10% solids as opposed to the traditional 15-35% solids.

ii) Electronic industry uses CPCs, 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 CPC-113 and Methyl Chloroform in electronics cleaning. Other Chlorinated solvents such as trichloroethylene, per chloroethylene and methylene chloride

have been used an 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.

6. 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 de-soldering stations.

vi) 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

(i) Land & Building

Built up area	1000 Sq. ft.
Office, Stores	300 Sq. ft.
Assembly & Testing	700 Sq. ft.
Rent Payable per annum	**Rs. 36,000/-**

(ii) Machinery and Equipment:

Sl.No	Description	Ind./Imp.	Qty. Nos.	Value(Rs.)
1.	Motorized winding machine	Ind.	1	30,000
2.	Manual winding machine	Ind.	1	7,000
3.	Table winding Machine	Ind.	1	7,000
4.	Oven	Ind.	1	28,000
5.	½ Inch Bench Drilling machine	-do-	1	4,000
6.	Portable drilling machine	-do-	1	3,000
7.	Bench Grinder 200 mm	-do-	1	4,000
8.	Soldering Machine	-do-	2	500
9.	2.5 KV Testing Machine	-do-	1	7,500
10.	Panel board for testing	-do-	1	5,000
11.	3 ½ digit clamp meter	-do-	1	3,500
12.	Megger 500 volts DC	Ind	1	3,500
13.	Multimeter	-do-	2	1,000
14.	Leakage current Earth Leakage Tester	-do-	1	4,500
15.	Auto Transformer 10 Amps	-do-	1	4,000
16.	Other misc. Instruments and meters	-do-	LS	5,000
			Total	**1,17,500**
Electrification Charges @ 10% of the Cost of Machinery & Equipment				Rs. 11,750
Office Equipment, Furniture & Working tables etc.				Rs. 20,000
Mould, die, tools, jigs and fixtures etc.				Rs. 5,000
Pre-operative Expenses				Rs. 5,000
Total				**1,59,250**
Total fixed Capital				**1,59,250**

Working Capital Per Month :

(i) Staff & Labour

Sl. No.	Designation	Nomber of Persons	Salary/month (Rs.)	Total Salary/ month (Rs.)
1.	Service Engineer/Supervisor	1	4,000	4,000
2.	Skilled Worker & Electrician	3	2,500	7,500
3.	Unskilled worker	2	2,000	4,000
			Total	15,500
			Add 15% perquisites of salary	2,325
			Total	**17,825**

(ii) Raw Material requirement per Month :

Sl.No	Description	Ind./Imp.	Qty.	Value(Rs.)
1.	Super Enameled Cooper	-do-	30 kqs.	11,850
2.	Ball Bearing	-do-	45 kqs.	5,000
3.	Coil of Iron	-do-	30 kqs.	2,250
4.	Geyser Coil	-do-	25 kqs.	4,000
5.	Shaft, Bush, Capacitor, Field Coil, Armature, Carbon etc.	-do-	LS	5,000
6.	Consumables stores & Cables, Paper Insulations	-do-	LS	3,000
7.	Mechanical & Electrical Accessories, Hardware & misc.	-do-	LS	4,000
			Total	**35,000/-**

(iii) Utilities Per Month

Power	Rs. 1,750
Water	Rs. 250
Total	**Rs. 2,000/-**

(iv) Other contingent Expenses per month

Rent	3,000
Postage and Stationery	500
Telephone/Telex/Fax charges	500
Repair & Maintenance	1,000
Transport and conveyance charges	1,000
Publicity &Advertisement	500
Insurance and Taxes	750
Miscellaneous Expenses	1,000
Total	**8,250**

Total recurring expenditure per month (i + ii + iii + iv) = Rs. 63,175/-

Total Capital Investment :

	(Rs.)
Fixed Capital	1,59,250
Working Capital on 3 months basis	1,89,525
Total	**3,48,775**

Financial Analysis:

Cost of Production Per annum :

1.	Total recurring expenditure per year	7,58,100
2.	Depreciation on machinery and equipment @ 10%	11,750
3.	Depreciation on tools, jigs and fixtures @ 25%	1,250
4.	Depreciation on office equipment & furniture @ 20%	4,000
5.	Interest on total investment @ 16%	55,804
	Total	**8,30,904**
	or Say	**8,30,900**

Turnover (Per Annum) :

Sl.No.	**Item**	**Qty. (Nos.)**	**Total Servicing (Rs.)**
1.	Repairing of fan, Grinder/ Mixer, Iron, Geysers	1,800	7,00,000
2.	Servicing of fan, Grinder/ Mixer, Iron, Geysers	3,000	3,00,000
		Total	**10,00,000**

Profit Per Annum (Before Tax) = (Turnover per annum - cost of production per annum)
= **Rs. 1,69,100**

Percentage of Profit on Sales:

$$= \frac{\text{Profit per Annum}}{\text{Sales per annum}} \times 100 = \frac{1,69,100}{10,00,000} \times 100 = 16.9\%$$

Rate of Return

$$= \frac{\text{Profit per annum}}{\text{Total Capital Investment}} \times 100 = \frac{1,69,100}{3,48,775} \times 100 = 48.4\%$$

BREAK EVEN POINT

Fixed Cost per annum:

Rent	36,000
Depreciation on Machinery @ 10%	11,750
Depreciation on Tools & Fixure @ 25%	1,250
Depreciation on Office Equipment & furniture @ 20%	4,000
Interest on Total Capital Investment @ 16%	55,804
Insurance	9,000
40% of salary and wages	85,000
40% of other contingent & utilities (Excluding rent and insurance)	34,200
Total	**2,37,004**
Or Say	**2,37,000**

$$\text{Break Even Point (BEP)} = \frac{\text{Fixed cost}}{\text{Fixed cost + Profit}} \times 100 = \frac{2,37,004}{2,37,004+1,69,100} \times 100$$

$$= 58.36\%$$

Additional Information

a) The Project Profile may be modified 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. It also extends to the process and environment in which they are generated. The ISO 9000 defines standards for Quality Management Systems 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.

NAME AND ADDRESS OF MACHINERY & TESTING EQUIPMENT SUPPLIERS:

Name & Address of the Machinery & Testing Equipment manufacturer/Supplier :

1. M/s. Prabhat Electronics, OMP Square, Cuttack Baidyanath Electronics, Chandan Palia, Cuttack.
2. M/s. Bhairab Electonics, Mangalabag, Cuttack.
3. M/s. Badal Electronics, Mangalabag, Cuttack.
3. M/s. Indian Electrical Corporation, 106 & 111, Chandaka Integrated Campus, Rasulgarh, Bhubaneswar.
5. M/s. H. P. Singh Machinery (Pvt.) Ltd., 75, Ganesh Chandra Avenue, Kolkata - 700013
6. M/s. Nandy & Co., 125 Belilious Road, Howrah- 711 101
7. M/s. Turnwell Machine Tools, 16, Ganesh Chandra Avenue, Kolkata - 700 013
8. M/s. Turner & Tools, 15, Ganesh Chandra Avenue, 2nd Floor, Kolkata - 700013
9. Pathak Machine Tools Pvt. Ltd. ,116, G. T. Road, Salkia, Howarh - 711 106
10. M/s. Patel & Company, Naupatna, Cuttack-1
11. Gollya Electricals Pvt. Ltd. Plot no. 64, G.I.D.C. Estate, Phase I, OPP. Sunita Textiles, Vapi - 396195. Distt Bulsar, Gujarat.
12. Gollya Instrument Pvt. Ltd., 311, Bharat Industrial Estate, T.J. Road, Sewree, Mumbai-400 015
13. Any dealer of L&T, SIEMENS, Havells, Crompton Greaves Ltd. etc. & local market.

Name and Address of Raw material Suppliers:

1. M/s Lucky Electricals, Manisahu Chhak, Cuttack.

2. Prabhat Electronics, OMP Square, Cuttack.

3. M/s. Utkal Electronics, 270-A, Saheed Nagar, Bhubaneswar.

4. M/s. Indian Electronics Corporation, 106 & 111, Chandakar Integrated Complex, Rasulgarh.

5. M/s. Mutual Insulated Cables and Conductors, Ltd., A-25 & 26, Phase-III, New Industrial Estate, Jagatpur, Cuttack-21.

6. M/s Bholenath Electricals, Buxi Bazar, Cuttack.

7. M/s D.P. Electricals, Ranihat, Cuttack.