

PROJECT PROFILE ON AUTOMATIC VOLTAGE STABLIZER

- 1. PRODUCT CODE (ASICC)** : -
- 2. QUALITY AND STANDARD** : As Per IS Specifications
- 3. PRODUCT CAPACITY** : Qty. 3000 Nos
Value ; Rs 25,50,000
- 4. YEAR OF PREPARATION** : 2010 – 2011
- 5. PREPARED BY** : Electrical Division
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1. Introduction

The Voltage stabilizer provides an output voltage with a specified limit for supplying to load irrespective of wide fluctuation in the input voltage, independent of load power factor and without introducing harmonic distortion. The voltage stabilizer adjusts automatically the voltage variation whether high or low to the proper voltage level necessary for the safe operation of equipments.

Excessive voltage fluctuation are hazard to costly electronic and electrical equipments like T.V. sets, VCRs, refrigerators and other scientific and medical equipments etc. Voltage stabilizers are used along with these equipment to protect them from damage due to wide line voltage fluctuations.

2. Market Potential

Consumer electronic products are the backbone of the electronic industry in the country. Consumer electronics contributes about one third of total electronics production in the country. Since the item is of great utility of the consumer electronics its demand is growing at a rapid pace in keeping with the increasing production of consumer electronics item.

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 onward.
- iii. The salary and wages, cost of raw materials, utilities, rent, etc. are base on the prevailing rates around Agra. These cost factors are likely to vary with time and location.
- iv. Interest on term loan and working capital loan must be preferably current rate. Otherwise, the rate of interest on an average may be taken as 13%. 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.
- ii. The project preparation cost etc. whenever required could be considered under pre-operative expenses.
- iii. The essential production machinery and equipment required for the project have been indicated. The unit may also utilize common test facilities available at Electronics Test & Development Centers (ETDCs) and Electronic Regional Test Laboratories (ERTLs) and Regional Testing Centers (RTCs).

4. Implementation schedule

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

	Period (in months) (suggestive)
1. Preparation of project report	1
2. Registration and other formalities	1
3. Sanction of loan by financial institutions	3
4. Plant & 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 material	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 of the 8th month onwards.
- 3. When imported plant and machinery are required, the implementation period of project may vary from 12th to 15 months.

5. TECHNICAL ASPECTS

I. Process of Manufacture

Components are assembled on a printed circuit boards as per the circuit design. The assembled PCB, Relay, Transformer, switch indicating lamps and power cables are further assembled to form a compact unit. The whole assembled unit is enclosed in metal case with an appealing front panel. Finally the stabilizer is tested for the performance as per the design.

II. Quality Standards

As per BIS standards.

III. Production Capacity Per Annum

Quantity	Value (Rs.)
2,400 Nos. (250 VA)	7,20,000
600 Nos. (500VA)	3,00,000

IV. Motive Power : 5 KVA

V. Pollution Control

The Govt. 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 sept. 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 chemical/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 environmental 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 apposed to the traditional 15-35% solids.
- ii) 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 convents 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 ketenes 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 system, QC and testing equipment 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 disordering station.
- 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.

6. FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building

Built up area	600 sq ft
Office	100 Sq ft
Stores	100 sq ft
Assembly(Workshop)	300 sq ft
Testing	100 sq ft
Rent payable/annum	Rs 72,000/-

(ii) Plant and Machinery

S.No.	Description	Qty. (Nos.)	Amount (Rs.)
1.	Multi Meter	2	5,000
2.	Auto-transformer 0 to 300V 10Amp	2	12,000
3	Test setup consisting of voltmeter, Ammeter & Watt meter	1 set	2500
4.	Bench Drilling Machine ½”	1 Nos.	5,000
5.	Megger	1 No.	7500
		Total	32,000
	Other fixed assets		
	Electrification charges @ 10% of the cost of machinery and equipment		3200
	Office equipments, furniture and working table etc.		20,000
	Tools, Jigs and fixtures, Etc.		10,000
	Pre-operative expenses		3,000
		Total	68,200
	Total Fixed Cost I+II		1,40,200

B. Working Capital Per Month :

(i) Staff and Labour

S.No.	Designation	No. of persons	Salary/ month (Rs.)	Total salary(Rs.)
1.	Skilled workers	2 Nos.	3500	7,000
2.	Unskilled workers	1 No.	2,000	2,000
	+ Perquisites @ 15% of salary			1350
			Total	10350

(ii) Raw material requirement per month

0.25 KVA Voltage Stabilizer Cost

Production per month 200 Nos.
25 working days

S.No.	Description	Ind./Imp.	Rate	Total cost per month
1.	Transformer	Indian	180	36000
2.	Fibre box & chassis	Indian	90	18000
3.	Plug and Socket	Indian	30	6000
4.	Lamps and mains cardname plate	Indian	16	3200
5.	PCB with the components	Indian	50	10000
6.	Relays, 2 Nos.	Indian	35	7000
7.	Screens and spares-insulation, sleeveings	Indian	20	4000
8.	Packing material		15	3000
9.	Volt Meter		80	16000
			516	
	Total	516x200		103200

0.5 KVA Voltage Stabilizer Cost

Production per month 50 Nos.
25 working days

S.No.	Bought out components	Rate/each	
1	Transformer	500	25,000
2	Fibre box and Chassis	120	6000

3	Mains Card and Socket and lamps	70	3500
4	PCB with components	80	4000
5	Relays (2 Nos.)	70	3500
6	Screws and spares insulation and sleeveings	40	2000
7	Packing material	25	1250
8	Volt meter	80	4000
		985 x 50	49250
	Total cost of Bought outs for month		Rs.
	200 x 0.25 KVA stabilizer		103200
	50 x 0.5 KVA stabilizer		49250
			1,52,450

(iii) Utilities and Power

Power	3000.00
Water	500.00
Total	3500.00

(iv) Other Contingent Expenses Per Month

1.	Rent	6000.00
2.	Potage & Stationary	500.00
3.	Telephone/Telex/Fax charge	2000.00
4.	Repair and maintenance	1000.00
5.	Transport and conveyance charges	1500.00
6.	Advt. and publicity	1000.00
7.	Insurance and taxes	1000.00
8.	Miscellaneous expenditure	1000.00
	Total	14000.00

Total recurring expenditure per month (i + ii + iii + iv)

=Rs 1,80,300.00

C. TOTAL CAPITAL INVESTMENT

Fixed Capital	1,40,200.00
Working Capital on 3 months basis	5,40,900.00
Total	6,81,100.00

D. FINANCIAL ANALYSIS

(I) COST OF PRODUCTION PER ANNUM

Total recurring expenditure	21,63,600
Depreciation on machinery and equipment @ 10%	3200
Depreciation on tools, jigs, and fixtures @ 25%	2500
Depreciation on office equipment, furniture @ 20%	4,000
Interest on total capital investment @ 16%	1,08,976
Total	22,82,276

(II) TERNOVER PER ANNUM

Item	Qty. (Nos)	Rate/Unit	Total Sales
Voltage Stabilizer (250 KVA)	2400	750/-	18,00,000
Voltage Stabilizer (500 KVA)	600	1250/-	7,50,000
		Total	25,50,000

(III) PROFIT PER ANNUM (BEFORE TAXES)

Turn over per annum - Cost of production per annum

25,50,000-22,82,276

= Rs. 2,67,724

Profit ratio = $\frac{(\text{Profit/annum}) \times 100}{(\text{Sales} / \text{annum})}$

= $\frac{2,67,724 \times 100}{25,50,000}$

= 10.49 %

$$\begin{aligned}
 \text{Rate of return} &= \frac{\text{Profit/annum} \times 100}{\text{Total Capital investment}} \\
 &= \frac{2,67,724 \times 100}{6,81,100} \\
 &= 39.31 \%
 \end{aligned}$$

D. Break Even Point

Fixed Cost per annum

Rent	72,000
Depreciation on machinery and equipment @ 10%	3200
Depreciation on tools, jigs, and fixtures @ 25%	2500
Depreciation on office equipment, furniture @ 20%	4,000
Interest on total capital investment @ 16%	1,08,976
Insurance	12000
40% salaries & wages	49680
40% other contingent & utilities (including rent & insurance)	67200
Total Fixed cost	3,19,556

$$\begin{aligned}
 \text{Break Even Point} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}} \\
 &= \frac{3,19,556 \times 100}{5,87,280} \\
 &= 54.41 \%
 \end{aligned}$$

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 Electronics 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 ,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 environment 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 & Equipment Suppliers

Machinery

1. M/s. Quality Machine Tools
34, JC Road, VISL Building, Bangalore-2.
2. M/s. Swastic Machine Tools
4, Lata Chambers, Nasik-422002.

Testing Equipment

1. M/s. Applied Electronics Ltd.
A-5, Wagle Indl. Estate, Thane-4.
2. M/s. Peico Electronics & Electrical Ltd.
Shivasagar Estate, Block-A,
Dr. Annie Besant Road, Bombay-12.
3. M/s. Agronic Instruments (P) Ltd
201, Shiva Shakti Indl. Estate,
Bombay -86.
4. M/s. Systronics
89-92, Indl. Area
Naroda-382330.
5. M/s. Noble Electronic
354, Lajpat Rai Market, Delhi-6.
6. M/s. Meco Instruments Pvt. Ltd.
Bharat Industrial Estate,
T.J. Road, Sewree, Bombay-400 015.

Soldering Equipment & Circuit Aids

1. M/s. Sysco Associates, 30/106, (New No. 234).

- 11th Main, Malleswaram, Bangalore-3.
2. M/s. Navanidhi Electronics (P) Ltd.,
1-60/1, Shehapuri, Nacharam, Hyderabad-7.
 3. M/s. Inde Associates
16, Rest House Crescent, off Church St.
Bangalore-1.
 4. M/s. Bergen Associates P. Ltd.
1082, Sector 27B, Chandigarh-19.
 5. M/s. Techtronics
B-70, End Cross, I Stage, Peenya Indl. Estate,
Bangalore-560058.
 6. M/s. Sumitron Marketing
A-46, Naraina Industrial Area, Phase-I,
P.O.Box 10227, New Delhi-28.
 7. M/s. Scientific Mes-Technic Pvt. Ltd.
B-4, Industrial Estate, Pologround,
Indore-452 003.

Raw Materials Suppliers

1. M/s. Electronics Trade & Technology Dev. Corp. Ltd.
New Delhi-21.
2. M/s. Amar Radio Corpn.
11/1, Thiglar Poriyanna Lane, SPP Road,
Bangalore - 560002.
3. M/s. Southern Electronics
No. 113, Sadarpatrappa Road
Bangalore-2.

4. M/s. Bharat Electronics Ltd.
Jalahalli Post, Bangalore-560013.
5. M/s. Continental Devices India Ltd.
C-120 Naraina Indl. Area
New Delhi-28.
6. M/s. Hiprint Corporation
29 New Okhla Indl. Complex, Phase-1
New Delhi-20.
7. M/s. Precision Electronics Ltd.
Unit I, 1-9E, DLF Industrial Area,
Faridabad-121003.