

PROJECT PROFILE ON D C POWER SUPPLIES

1. PRODUCT CODE

(i) (ASICC) : 77207
(ii) NIC : 31103
(iii) ITC(HS) (8digit) : -

2. QUANTITY AND STANDARD : BIS specification IS : 7204 : 1980

3. PRODUCT CAPACITY : 1200 Nos per annum
: Value : Rs 4,20,000

4. YEAR OF PREPARATION : 2010 – 2011

5. PREPARED BY : Electrical Division
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1. Introduction

DC Power Supplies ((9V/12V-500mA) are modular power supplies used as power source to electronics equipments and industrial instrumentation. It can also be used as a power pack for radio/ two-in-one, calculator. The regulated power supply provides short circuit protection/over voltage protection in addition to maintain load regulation and line regulation. The power supply is cost effective and versatile. They are also termed as fixed voltage power supplies.

2. Market Potential

There are around more than 250 MSME units in the manufacturing of regulated power supplies but very few in the manufacture of modular type of fixed voltage power supplies . The demand of modular type of power supplies is increasing day by day and the product is having very good export potential.

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 in and 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.
- vii) The project preparation cost etc. whenever required could be considered under pre-operative expenses.
- viii) 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

The manufacturing process involves the assembly of tested electronic components on PCB as per the designs and specifications . The assembled unit is suitably wired and mounted in the cabinet . Hardware/ mechanical mounting /heat sinks are installed . The completed unit is tested for its performance and quality and defects if any are rectified . or if found satisfactory in the performance tests sealed ,packed and dispatched to the stores/ dealers.

II. Quality Control and Standards

The relevant specification of Bureau of Indian standards governing the power supply is IS 7204: 1980. The other specifications are given hereunder typically.

Output voltage	9V or 12 V
Output current	500 mA(max.)
Output regulation	Better than 0.1 %
Input regulation	Better than 0.1 %
Ripple content	Less than 5mV (PP)
Short circuit protection	Foldback/current limiting
Crowbar protection	Vout +0.5 V
Average voltage protection.	

The power supply should also confirm EMI/EMC tests also.

III. Production Capacity Per Annum

- a. Qty : 1200 pieces per annum.
- b. Value : Rs. 4,20,000.00

IV. Power requirement : 5 kw (Approx.)

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.

7. FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building

Built up area	600 sq ft
Office	80 Sq ft
Stores	150 sq ft
Assembly(Workshop)	250 sq ft
Testing	120 sq ft
Rent payable/annum	Rs 48,000/-

(ii) Machinery and Equipment

S.No.	Description	Ind./Imp.	Qty.	Value (Rs)
1.	Oscilloscope (10MHz)	Indian	1	12,000.00
2.	Multimeter	Indian	2	5,000.00
3.	Digital multimeter	Indian	1	4,500.00
4.	Dimmerstat (4A)	Indian	1	2,000.00
5.	Rheostats	Indian	5	3,000.00
6.	Megger	Indian	1	3,500.00
7.	Panel Meter	Indian	4	3,000.00
8.	HV Tester	Indian	1	6,000.00
9.	PCB Assembly Aids	Indian	2	2,000.00
			Total	41,000.00
	Other fixed assets			
	Electrification charges @ 10% of the cost of machinery and equipment			4100.00
	Office equipments, furniture and working table etc.			25,000.00
	Tools, Jigs and fixtures, hand operated soldering			20,000.00

	iron etc.			
	Pre-operative expenses			15,000.00
			Total	1,05,100.00
Total Fixed Capital (I + II)				1,53,100.00

B. Working Capital Per Month :

(i) Staff & Labour

SI. No.	Designation	No. of persons	Salary/Month (Rs.)	Total salary per Month (Rs.)
1.	Skilled Workers	2	3500.00	7000.00
3.	Watchman/Peon	1	2000.00	2000.00
				9000.00
	+ Perquisites @ 15% of salary			1350.00
			Total	10,350.00

(ii) Raw material per month

S.No.	Description	Ind./Imp.	Qty.	Value (Rs)
1.	Transformer	Indian	100 pcs.	4000.00
2.	ICs & semiconductors	Indian	100 pcs.	5000.00
3.	PCB	Indian	100 pcs	2000.00
4.	Hardware s/ws , fuse,fuse holders etc.	Indian	100 pcs	2000.00
5.	Cords,wires,screws,heatsinks Nuts, terminals etc.	Indian	L.S.	3000.00
6.	Cabinet/ packing materials	Indian	100 pcs.	3000.00
			Total	19,000.00

(iii) Utilities and Power

Power	2000.00
Water	500.00
Total	2500.00

(iv) Other Contingent Expenses Per Month

1.	Rent	4000.00
2.	Potage & Stationary	500.00
3.	Telephone/Telex/Fax charge	1500.00
4.	Repair and maintenance	500.00
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	11000.00

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

=Rs 42,850.00

C. Total Capital Investment

Fixed Capital	1,53,100.00
Working Capital on 3 months basis	1,28,550.00
Total	2,81,650.00

D. FINANCIAL ANALYSIS

(I) COST OF PRODUCTION PER ANNUM

Total recurring expenditure	5,14,200.00
Depreciation on machinery and equipment @ 10%	4100.00
Depreciation on tools, jigs, and fixtures @ 25%	5,000.00
Depreciation on office equipment, furniture @ 20%	5,000.00
Interest on total capital investment @ 16%	45064.00
Total	5,73,364.00

(II) TERN OVER PER ANNUM

Item	Qty. (Nos)	Rate/Unit	Total Sales
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D C Power supply	1200	Rs 600 each	7,20,000.00
		Total	7,20,000.00

(III) PROFIT PER ANNUM (BEFORE TAXES)

Turn over per annum - Cost of production per annum

$$= 7,20,000 - 5,73,364$$

$$= \text{Rs. } 1,46,636/-$$

Profit ratio

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

$$= \frac{1,46,636 \times 100}{7,20,000}$$

$$= 20.36 \%$$

Rate of return

$$= \frac{\text{Profit/annum} \times 100}{\text{Total Capital investment}}$$

$$= \frac{146636 \times 100}{281650}$$

$$= 52.06 \%$$

D. Break Even Point

Fixed Cost per annum

Rent	48000.00
Depreciation on machinery and equipment @ 10%	4100.00
Depreciation on tools, jigs, and fixtures @ 25%	5000.00
Depreciation on office equipment, furniture @ 20%	5000.00

Interest on total capital investment @ 16%	45064.00
Insurance	6000.00
40% salaries & wages	49680.00
40% other contingent & utilities (including rent & insurance)	52,800.00
Total Fixed cost	2,15,644.00

$$\begin{aligned}
 \text{Break Even Point} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Profit}} \\
 &= \frac{2,15,644 \times 100}{3,62,280} \\
 &= 59.52 \%
 \end{aligned}$$

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

1. M/s Applied Electronics Ltd
A-5, Wagle Industrial Estate,
Thane-400604
2. M/s Pieco Electronics & Electricals Ltd
Shivsagar Estate , Block AI, Dr. Annie Basant Road
Bombay-18
3. M/s Systronics , 82-92, GIDC Estate
Naroda, Ahmadabad

Raw Materials Suppliers

1. M/s Bharat Electronics Ltd
Jahahalli West
Bangalore-13
2. M/s Continental Devices (I) Ltd
C-120, Naraina Industrial Area
New Delhi-110028
3. M/s Indian Technological Products
305, Building No.35-36, Nehru Place,
New Delhi -19
4. M/s J J Electronics ,A-23
Mayapuri Industrial Area,
Phase II , New Delhi-64