

PROJECT REPORT

Of

LED LAMP ASSEMBLY UNIT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **LED Lamp Assembly unit**.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]



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**PROJECT REPORT
ON
' LED BULB ASSEMBLY UNIT '**

Production Capacity: 45000 Nos. per annum

INTRODUCTION-

LED is semiconductor Technology that emits light at the junction of oppositely charged materials when voltage forces electron movement. Led based lighting systems are devices consisting of many LEDs chips embedded on the LED fixtures base and fitted with rectifier circuit that provides regulated current output at the low voltage that makes them to be operated on AC Circuit because LEDs requires DC to operate.

The whole PCB circuit board is fitted inside a plastic enclosure along with the metallic cap and Smokey reflector.

MARKET POTENTIAL-

Conventional lighting systems represent mainly incandescent light bulbs and compact fluorescent lights (CFLs).LED lighting system provides advantages over conventional lighting systems in terms of better energy efficiency, better energy costs, longer lifetime, less temp. Sensivity, higher light output. This leads them to be better Lighting substitute and good market prospect. Therefore the market prospect for LED based Lighting system is good and booming.

BASIS AND PRESUMPTIONS

- (i) The basis for calculation of production capacity has been taken on single shift basis on 60% efficiency.
- (ii) The maximum capacity utilisation on single shift basis for 300 days a year. During first year and second year of operations the capacity utilisation is 60% and 70% respectively. The unit is expected to achieve full capacity utilisation from the third year onward.
- (iii) The salaries and wages, cost of raw materials, utilities, rent etc are based on the prevailing rates in and around Patna. 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 11.50%. This rate may vary depending upon the policy of the financial institution/agencies from time to time.
- (v) The cost of machinery and equipment refer to a particular make/model and prices are approximate.
- (vi) The breakeven point percentage indicated is of full capacity utilisation.
- (vii) The project preparation cost etc whenever required could be considered under preoperative expenses.

- (viii) The essential production machinery and test equipments required for the projects have been indicated. The unit may utilize common test facilities available at ETDC and ERTLs and Regional Testing Centre (RTC).

TECHNICAL ASPECT

Process of Manufacturing; This project profile is made for the assembling of LED based Lighting system cum LED Lamp up to 10 W. The assembling of LED based Lighting system cum LED Lamp consists of the following steps:

1. Procurement/import of LED chips of Mili Watt rating, Procurement of Circuit and other mounting devices.
2. Embedding of LED Chips of miliwatt rating on the PCB board with the rectifier circuit, filter circuit etc.
3. Fitting of PCB Board with the holder cap and plastic modules fitted with the Smokey reflector to form a compact unit.
4. Testing of the assembled LED Lighting systems and packing

QUALITY CONTROLS & STANDARDS

As Per IS 16102 (Part I & II) 2012

PRODUCTION CAPACITY (PER ANNUM)

Qty; 45000Nos.Value: Rs.74,25,000

MOTIVE POWER 5KW

POLLUTION CONTROL

The govt. Accords utmost importance to control environmental pollution. The Small-Scale entrepreneur should have an environmental friendly attitude and adopt pollution control measures by process modification and technology substitutions.

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 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 environmental and the end products. Alternative 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 solvents such as trichloroethylene, perchloroethylene and methylene chloride have been used as effective cleaners in electronic industry for many years. Other organic solvents such as Ketenes and Alcohols are effective in removing both solder fluxes and many polar contaminants.

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 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 and capacity building of Bureau of Energy Efficiency created under the act.

The following steps may be help for conservation of Electrical Energy:

- i) Adoption of energy conserving technology, 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 motors compressors etc
- v) Use of power factor correction capacitors, proper selection and layout of lighting systems timely switching on/off of the lights, use of Compact Fluorescent Lamps wherever possible.

FINANCIAL ASPECT

(I) Land and building

Built up Area	3000 SqFt
Office, Store	1000 Sq Ft
Assembly and Testing	2000 Sq Ft
Rent payable Per Annum	1000.00 PM

(ii) Machinery and equipment

SNo	Description	Qty	Value (RS.)
1	Component forming machine	02	1,00,000
2	Soldering Machine	10	5,000
3	Digital Multimeter	02	8,000
4	Continuity Tester	10	1000
5	Sealing Machine	01	10,000
6	Packaging Machine	01	15,000
7	LCR Meter	02	20,000

8	Small Drilling M/C Set	01	10,000
9	Lux Meter	01	40,000
10	Oscilloscope	01	60,000
11	Personnel Computer with UPS and Printer	01	80,000
7	Miscellaneous items		10,000
	Total		3,59,000

Other Assets

Contingent expenses @ 10% on cost of P&M	35900
Office equipment, furniture and working table etc Tools, jigs and fixtures	50,000
Pre operative expenses	50,000
Total	135900

Cost of Project

S.NO	PARTICULARS	TOTAL COST	MARGIN 25%	LOAN
1	Land & Building	0.00	0.00	0.00
2	Plant and Machinery	3.59	0.90	2.69
3	Furniture & Fixture	0.50	0.13	0.38
4	Contingencies	0.36	0.09	0.27
5	Pre and Post operative exp	0.50	0.50	0.00
6	Margin for Working Capital	15.88	3.97	11.91
	Total	20.83	5.58	15.25

Means of Finance

S.NO.	PARTICULARS	AMOUNT
1	Own Contribution and Unsecured loan	5.58
2	Term Loan	3.34
3	Working capital	11.91
	Total	20.83

Working Capital Per Month

i) Staff & Labour

S.No.	Designation	No.	Salary(Rs.)	Total(In. Rs.)
1	Supervisor Cum Manager	1	18,000.00	18,000.00
2	skilled workers	5	10,000.00	50,000.00
3	Accountant	1	8,000.00	8,000.00
	Add:: Perquisite			7,600.00
	Total Monthly Salary			83,600.00
	Total Annual Salary	7		10,03,200.00

ii) Raw Material Requirement Per Month

S N	Description	Qty	Rate	Value (Rs.)
1	LED Chips	45000	4	180000
2	Rectifier Circuit with filter	3750	20	75000

3	Heat Sink Devices	3750	5	18750
4	Metallic Cap Holder	3750	10	37500
5	Plastic Body	3750	10	37500
7	Reflector Plastic Glass	3750	10	37500
8	Connecting wire	LS		3,000
9	Soldering Flux	LS		3,000
10	Miscellaneous			8,000
11	Packaging Material			10,000
	Total PM			4,10,250
	Total PA			49,23,000

iii) Power expenses Per Annum **63000.00**
 (iv) Other operating Expenses

S.No	Particulars		Amount(In.Rs)
1	Rent	10000PM	120000.00
2	Repair and Maintenance		15000.00
3	Postage and Stationery		5000.00
4	Telephone Charges		15000.00
5	Transportation and Freight		50000.00
6	Insurance		8000.00
7	Sales Expenses	1% of Sales	74250.00
8	Other Manufacturing Expenses		50000.00
9	Miscellaneous Expenses		25000.00
	Total		362250.00

Total Reoccurring Expenditure Per Month (I+ii+iii+iv)= 467750

Total Capital Investment (In Rs lac.)

1	Total Fixed Capital	4.95
2	Working Capital for 3 Months	15.88
	Total	20.83

Financial analysis

Cost of production per annum

Rs in lacs

Total recurring expenditure	63.51
Depreciation on machinery and equipment@10%	0.54
Depreciation on tools, jigs and fixtures @15%	0.05
Depreciation on office equipments, furniture @ 10%	1.83
Interest on total Capital investment @ 12%	65.93

Turn over per annum

Item	Qty (Nos)	Rate/unit	Total value (Rs.in lac)
LED Lamp	45000	165	74.25

Profit per annum (before Taxes) = Turnover per annum- Cost of Production per annum = Rs8.32lac

Net profit ratio= profit/annum*100/sales/annum = 11.21%

Additional information

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

DISCLAIMER

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