

TAMIL NADU RURAL TRANSFORMATION PROJECT

Business Plan for LED Bulbs Manufacturing unit

1. Village Panchayat:	AA Village
2. Block:	BB Block
3. District:	DD District
4. Applicant:	Mr.AAA
5. Activity:	LED Bulbs manufacturing
6. Classification:	MSME - Manufacturing
7.Sector classification (TNRTP)	Nano
8. Purpose of Note:	To recommend for sanction of the following limits: Term Loan/Working Capital Demand Loan/Composite Loan
9. Nature of Facility	Term loan – Composite loan
10. Purpose	For new LED bulbs manufacturing unit.
11. Limit required	Rs.4.50 Lakhs
12. Margin	10% of the project cost of Rs.5 lakhs i.e Rs. 0.50 Lakhs

I. Introduction : (Details of Promoter name, age, qualification and experience, activity to be financed, existing or new unit, any existing facilities with Banks etc. The present request for loan and purpose.)

Mr. AAA, 34 years of age, a graduate is from AA village, BB Block, DD District. The applicant has developed contacts in this line of business through friends and relatives and has planned to tap the market in four nearby districts. The proposed activity is to be set up in the applicants own place. Initially the activity involves assembling of LED bulbs of 9 Watts and 12 Watts with two categories i.e. ordinary type bulb and inverter type bulb. The applicant presently is not enjoying any facility with any Bank. The present request is for term loan – composite loan of Rs.4.50 Lakhs under TNRTP Matching Grant Programme for new LED Bulb manufacturing unit as well as for working capital for smooth conduct of day to day operations.

About the product:

LED stands for light emitting diode. An LED is a semiconductor device, generating light through a process called electroluminescence. When you pass an electric current through semiconductor material, it emits visible light. As such, an LED stands in exact contrast to a photovoltaic cell, which is the cell used in solar arrays to convert visible light into electricity.

Advantages of LED Lighting:

1. Long lifespan, 2. Energy efficiency, 3. Improved environmental performance, 4. The ability to operate in cold conditions 5. No heat or UV

emissions, 6. Design flexibility, 7. Instant lighting and the ability to withstand frequent switching, 8. Low voltage operation, 9. Dimming capabilities and 10. Directionality.

Market (About Industry in general and demand)

The Indian LED Lighting market is expected to grow at a CAGR of 24.3% during the period (2021-2026). In the current market scenario, LEDs have gained mainstream in the market for lights. Key factors behind this are the continuous declining LED prices in the country and favorable Government initiatives, such as UJALA, offering LEDs at a subsidized cost and LED installation projects for street lights, respectively.

LED bulbs produce light approximately 90% more efficiently than incandescent light bulbs, such as fluorescent and bright lights. About 95% of the energy in LEDs is converted into light, and only 5% is wasted as heat, which is leading consumers to opt for a more efficient form of lighting. The market is segmented by different applications of LED light, such as indoor and outdoor. The indoor segment is further bifurcated to residential, commercial, industrial, and Government applications, whereas, the outdoor segment is bifurcated to highway and roadway, architectural, and public places segments.

II. Category of Loan: Nano (up to Rs.5 Lakhs)

1. Profile of the Entrepreneur

Name	AAA
Spouse Name	
Age	34
Education	Graduate
Aadhaar Card No	86XXXX111111
Address	
Phone No	Nil
Mobile No	9111111111
Email ID	-
Number of years of experience in business	4 Months
Trainings attended (no. and hours)	One Training - 120 Hours
Spouse's occupation	Agriculture
If Special category	-

2. Enterprise Profile

3.

Name of the Enterprise	BBB Electricals
Legal form of Enterprise	-
Registration No	2222222222
Registration Date	01.02.2021
Registered with whom	MSME
GST No (if available)	-
UDYAM Registration No. (If available)	TN11111111

4. Bank Linkage Details

Whether the enterprise has separate bank account	No
If any bank credit availed	No
Name of the bank and Branch Details	Nil
Nature of the bank facility	Nil
Limit Sanctioned	Nil
Balance outstanding as on date	Nil

4. Enterprise Nature

Type of enterprise	Manufacturing
Product to be produced:	LED Bulb manufacturing.
Present Demand	<p>The unit is located in a central place in the village, well connected to the road and easy approach to the consumers.</p> <p>There is good demand for the LED Bulbs in view of the energy savings, long life and good lighting effect. In view of the good contacts developed by applicant through his friends and relatives the product is to be marketed in DD district as well as nearby four districts. Apart from the local consumers and retailers who directly purchase, bulk procurement of Bulbs on a regular basis is expected from nearby districts. Demand is not a constraint for LED Bulbs.</p>

<p>Current Supply - Current issues in the supply and how the entrepreneur will address this in her / his venture? What is the USP to overcome the competition?</p>	<p>Raw materials are available on a continuous basis. The lead time will be 4 to 5 days upon placement of order. The production is planned for 300 days based on the availability of raw materials. In the first year the capacity utilization is assumed at 70%.</p> <p>Further there are no similar units present in the district. Hence the competition will be from the branded products such as Philips, Osram etc., However the bulbs assembled by the applicant will be priced between 10% to 20% lower than the price of the branded items. However the same quality will be maintained. Hence no issues are envisaged in the supply side. Good quality LED Bulbs at a lower price is the USP.</p>
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III. TECHNICAL FEASIBILITY:

Location / Infrastructure:	
<p>1. Location Brief on Location – Whether well connected to market by road etc.,</p>	<p>The unit is located in a central place in the village, well connected to markets through the Main Highway and is easily approachable to the consumers as well as suppliers of raw materials.</p>
<p>2. Land Extent of Land, sq.ft. Panchayat approval, own/leased</p>	<p>The business is proposed to be run in own premises. The required land space is available. According to applicant the panchayat approval for the proposed activity is not required as it is under Village and cottage industry..</p>
<p>3. Building Approved plan from local body, sq,ft, whether sufficient for the proposed activity</p>	<p>The applicant will be running the unit in his own place. The applicant has around 600 sq.ft of covered space. Out of this 100 sq.ft to be used for office purpose and 500 sq.ft for assembling and storing</p>

	purpose. Approval/License from Village Panchayat is to be obtained if necessary. The cost of land and building is not included in the Project cost.
4. Power Whether required power connection is available	The required power for running the unit will be around 200 units per month at Rs.5/- per unit. The required single phase connection is available.
5. Water Whether adequate water is available.	Water is required only for consumption purpose and not for the assembling activity. The required water to be drawn through bore well at the site.
6. Approval Pollution control Board/GST/FSSAI approvals or any other approval is required. Present Status	The applicant will be applying for GST Registration. Since the activity falls under white category i.e. No pollution, Pollution control Board(PCB) approval is not required. An intimation to PCB will suffice. The applicant has registered under UDYAM.(Registration no.TN11111111)
7. Materials Needed Quantity / Cost / Availability / Delivery Time to be discussed. a. Raw materials : b. Equipment : c. Technology :	<u>Raw-materials</u> The raw materials required comprise of LED of different colours and thickness, diode, resistor, LED Cap, holder etc which is available in a set for each bulb. For assembling one bulb, one set of raw materials is to be purchased. One set of raw materials for one 9 Watt bulb will cost Rs.49/-. For 12 Watt bulb, one set of raw material will cost Rs.100/-. The raw materials are purchased from Nagpur through a dealer from DD district. Equipment: The promoter requires a set of machines for different processes involved in assembling. The required machineries are detailed in Annexure A. The machineries are to be procured indigenously from different suppliers from Pune, Chennai.(Quotations are enclosed)

	<p>Technology: The applicant has necessary experience in the line of activity. No specific technology is required in the production process. In case of any technical issues the required technological support will be provided by the supplier itself.</p>						
<p>8. Cost of capital assets: Details of equipment/machinery with cost of individual item required along with quotations.</p>	<p style="text-align: right;">(Rs in lakhs)</p> <table> <tr> <td>1. Machineries & other Fixed Assets (As per Annexure A)</td> <td style="text-align: right;">0.50</td> </tr> <tr> <td>2. Working capital (As per annexure B)</td> <td style="text-align: right;">4.50</td> </tr> <tr> <td>Total Project cost</td> <td style="text-align: right;">5.00</td> </tr> </table>	1. Machineries & other Fixed Assets (As per Annexure A)	0.50	2. Working capital (As per annexure B)	4.50	Total Project cost	5.00
1. Machineries & other Fixed Assets (As per Annexure A)	0.50						
2. Working capital (As per annexure B)	4.50						
Total Project cost	5.00						
<p>9. Cost of working capital for one operating cycle a. raw-materials, b. Semi-finished goods, c. finished goods, d. receivables outstanding Total working capital needs (The value of raw-materials, semi-finished goods, finished goods, receivables outstanding to be arrived)</p>	<p>The working capital requirement is arrived at Rs.4.50 lakhs as per Annexure B.</p>						
OR							
<p>25% of projected annual sales turnover if necessary. (The projected annual sales should be reasonable and acceptable)</p>	<p>The assessment has been done as per holding levels detailed in annexure B.</p>						
<p>10. Skills Requirements: skilled labour available / Not available</p>	<p>The promoter is experienced in the line of activity and has the required skills to run the unit. The unit requires 2 persons</p>						

<p>If not available: whether people can be trained? If so, training period and training facility?</p>	<p>to start with for assembling the bulbs. The wages is to be paid at Rs.300/- per day for each person. The monthly wages works out to Rs.15000/-.</p>
<p>11. Production Process:</p>	
<p>a. Production Plan/cycle (operating cycle may be one-day / week / month or one year as per the activity selected):</p>	<p>The process is detailed below:</p> <ul style="list-style-type: none"> • Procurement/import of LED chips of MiliWatt rating, Procurement of Circuit and other mounting devices. • Embedding of LED Chips of MiliWatt rating on the PCB board with the rectifier circuit, filter circuit etc. • Fitting of PCB Board with the holder cap and plastic modules fitted with the Smokey reflector to form a compact unit. • Testing of the assembled LED Lighting systems and packing <p>The operating cycle is assumed at 46 days for the unit as detailed in Annexure B.</p>

IV. COMMERCIAL FEASIBILITY:

<p>Marketing strategy :</p> <p>a. Direct to customers :</p> <p>b. Bulk to Institutions :</p> <p>c. Through Retailers / Wholesalers:</p> <p>d. Through Online:</p>	<p>LED Bulbs are widely used in all the States in India. The demand is growing in view of the savings in energy and long life of the LED Bulbs when compared to the conventional bulbs. The unit will be assembling 9 Watts and 12 Watts bulbs to start with. The bulbs are to be priced at 10% to 20% lower than the price of the branded items such as 'Philips' available in the market. However there will not be any compromise in the quality. The assumptions are detailed in</p>
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	<p>Annexure C and the profitability projections in Annexure D.</p> <p>The focus will be on direct sales to customers and retailers in DD district as there is good demand. Further focus will be on nearby four districts for bulk sales through wholesalers and retailers.</p>
<p>e. Pricing & Discounts :</p>	<p>The price for one bulb 9 Watts ordinary type is fixed at Rs.65/- and inverter type at Rs.320/- per piece. Similarly the price of one 12 Watts ordinary bulb is fixed at Rs.125/- per piece and inverter variant at Rs.430/- per piece. Bulk supply will be encouraged with a discount in price.</p>
<p>f. Market promotion strategies:</p>	<ul style="list-style-type: none"> • To target direct sales to customers in the local area and nearby districts. • Further to explore the possibility of selling under “CCC” brand name through distributors after obtaining ‘Quality Certificate’ from NSIC. • Different methods/attractive packing materials will be used for packing the LED Bulbs to attract different types of customers. • Bulk sales through agents who procure in bulk quantities for sales in nearby four districts .
<p>g. Physical and digital connectivity:</p>	<p>While the payments are also accepted by way of cash, digital payments will be encouraged with appropriate equipment installed and cost will be borne by the applicant.</p>
<p>h. Risks and risk mitigation planned:</p>	<p>Market risk – The unit is the only unit working in the village and nearby areas. Further high quality will be maintained in view of the quality of Raw materials to be procured from Nagpur.</p>

V. ENVIRONMENT ASSESSMENT

To be entered as per the required category of the enterprise proposed: White Category(code 4012) – No Pollution. The enterprise need not obtain Consent to operate from TNPCB. However intimation about the activity is to be sent to TNPCB.				
Environment Issue identified	Environment Guidelines or mitigation measures Integrated (Please tick)	Greening Measures identified	Support needed	
		(for green, orange and red categories)	Implement the mitigation measures	Implement the greening measures
Exploitation of local resources (water and energy)	•Electricity		NA	NA
Waste generation and disposal			NA	NA
Worker and Community safety	•Safety measures / gadgets	Safety masks, chappals to be provided.	NA	NA

Whether the activity proposed is in the negative list: No

VI. FINANCIAL VIABILITY

1. Cost of the project and Means of the project:

a. Cost of the Project:	(Rs in lakhs)
i. Fixed capital Cost of all the equipment's /machinery/construction(excluding land cost)	Machineries – 0.50
ii. Working capital	Working capital 4.50
iii. Pre-operative expenses*	Nil
Total cost of the project (i + ii + iii)	5.00
*Pre-operative expenses such as salaries to permanent staff before commencement of operations, Interest during holiday period etc to be met by the borrower from his own source.	
b. Means of the project:	
i. Loan from financial Institution / Bank (95% or 90%):	4.50
ii. Margin money -Borrower's contribution (5% or 10%):	0.50
Total means of the project (i + ii)	5.00
c. Matching grant from the project**	1.50
Whether the entrepreneur has the sufficient means to bring in the margin money and has enough buffer to manage any cost escalations	Yes. The applicant will be depositing to the extent of Rs.50000/- in the Bank.

**Matching Grant is @30% of the total cost of the project (excluding pre-operative expenses, land cost, lease). As Matching Grant will be kept in a "Subsidy Reserve Fund" account of the bank as a back-ended grant, it is not shown under the Means of the project. The matching grant to be adjusted as below:

	(Rs in Lakhs)
Loan initially disbursed by the Bank	- 4.50
Less 30% matching grant	- 1.50
Balance principal amount to be repaid by Borrower	- 3.00

Upon completion of minimum period of 18 months and upon repayment of

principal amount of Rs.3.00 lakhs and the interest portion, the matching grant of Rs.1.50 lakhs can be adjusted to the loan account of the borrower and the loan account can be closed.

2. Repayment capacity: Based on net disposable income method.

Particulars	Value in Rs.
Cash surplus from enterprise for 1 month (as per Profitability projection annexure D i.e. Rs.497000/12 months)	41416/-
Other income from house hold members (To be obtained from the applicant)	20000/-
Total income	61,416/-
Total House hold expenses- (To be obtained from the applicant)	30,000/-
Net disposable income	31,416/-
50% of net disposable income*	15,708/-
Repayment commitment Loan repayment period is 36 months for Rs.4.50 lakhs. Principal repayment P.M. – Rs.13,700/-	13,700/-

*50% of net disposable income covers the loan instalment. The repayment capacity is comfortable.

Alternatively, Banks may assess the repayment capacity based on the Debt service coverage ratio as per details below:

Calculation of Debt service coverage ratio(DSCR). (Profitability based on Projections in Annex D and assumptions Annexure C)

- Loan amount of Rs.450000/- repayable in 36 months @ 12% after Holiday period of 3 months.
- Monthly instalment - principal amount is Rs.13,700/-
- Last instalment being Rs.12,300/-
- Though the repayment is fixed for 36 months, upon prompt repayment the loan is closed on the 26th month itself with matching grant amount of Rs.150000/- which is eligible for the project.
- 50% of net profit and depreciation is taken for DSCR Calculation in the I Year since only six months operation in I Year
- Interest calculation details available in Annexure E.

Particulars	YEAR 1(6 M)	YEAR 2	YEAR 3
Net profit after tax	2.46	5.84	6.93
Depreciation	0.05	0.05	0.05
Interest	0.18	0.22	0.04
Grant		0	1.5
Cash surplus A	2.69	6.11	8.52
Principal Repayment	0.41	1.64	2.45
Interest	0.18	0.22	0.04
Repayment obligation B	0.59	1.86	2.48
DSCR A/B	4.58	3.28	3.43
Average DSCR		3.76	

The average DSCR is 3.769 which is above the minimum DSCR of 1.5: 1 as required by MGP guidelines. The repayment capacity is comfortable.

VII. Recommendation:

As the proposal is viable and complies with the guidelines in respect of Matching Grant Programme, we may recommend to the concerned Bank.

Prepared by SGR.

ANNEXURE – A

Sl.No	Description	Qty. (No.)	Rate per set Rs.	Amount (Rs.)
1	Set of Machines comprising of Punching machine, Soldering machine, Tikking fitting machine, screw fitting machine Peeling Machine	3 sets	15000	45000
2	Test setup with voltmeter, Ammeter and Watt meter	1 Set	3000	3000
3	Assembling table & accessories	1 Set	2000	2000
Total			50000	50000

Total Machineries and Equipments required – Rs.0.50 Lakhs

Annexure - B

Working Capital Assessment

Particulars	Holding Period	Year I	Year II	Year III
Raw material stock	10 days	0.77	0.88	0.99
Packing material	30 days	0.02	0.02	0.02
Work in progress	0	0	0	0
Finished goods	6 days	0.52	0.59	0.65
Receivables	30 days	3.21	3.67	4.13
Gross working Capital		4.52	5.16	5.80
Trade creditors		0.00	0.00	0.00
Working capital requirement		4.52	5.16	5.80
Rounded off		4.5	5.7	6.4

The operating cycle is assumed at 46 days excluding holding period of packing materials. The working capital requirement for the I year is Rs 4.50 Lakhs. The Creditors are assumed as Zero since purchases are on cash and carry basis.

Annexure C

BASIS & PRESUMPTIONS

Assumptions for working out economics for manufacturing 30000 units LED Bulbs/ Annum capacity.

1. Total Installed Capacity 30000 units of LED Bulbs per annum.
2. The unit will operate in a single shift of 10 hours for 300 days.
3. Capacity utilization: 1st year – 70%, 2 Year – 80%, 3rd onwards – 90%
4. The unit will assemble 9Watts and 12 Watts bulbs only. 2/3rd of the capacity utilisation will be utilised for assembling 9Watts and 1/3rd of the capacity utilisation will be utilised for assembling 12 Watts.
5. The details of sales and the pricing are given below for the I year i.e. 21000 units assembled(9 Watts – 14000 units and 12 Watts – 7000 units). It is assumed that 75% of the units assembled will be for ordinary type of LED bulbs and 25% of units assembled will be for inverter type.

S. No.	Watts	Type	Number	Rate (Rs.)	Amount (Rs.)
1.	9W	Ordinary	10500(75% of 14000)	65/-	6,82,500
2.	9W	Inverter	3500(25% of 14000)	320/-	11,20,000
3.	12W	Ordinary	5250(75% of 7000)	125/-	6,56,250
4.	12W	Inverter	1750(25% of 7000)	430/-	7,52,500
5.	Total		21000		32,11,250

6. Raw material cost for the I Yr is assumed as per details below:

S. No.	Watts	Type	Number	Rate (Rs.)	Amount (Rs.)
1.	9W	Ordinary	10500(75% of 14000)	49/-	5,14,500
2.	9W	Inverter	3500(25% of 14000)	225/-	7,87,500

3.	12W	Ordinary	5250(75% of 7000)	100/-	5,25,000
4.	12W	Inverter	1750(25% of 7000)	280/-	4,90,000
5.	Total		21000		23,17,000

7.Wages is assumed for 2 persons at Rs.300/- per person per day for 300 days.

8.Packing material cost at 1% of raw material cost.

9.Power required is estimated at 200 units per month at Rs.5/- per unit.

10.Conveyance and travel expenses is estimated at 1% of sales for delivery of finished goods.

11.Miscellaneous expenses at Rs.1000/- per month.

12.Depreciation at 10% on straight line method.

13.Interest on Composite loan is assumed at 12% per annum.

14.Tax at 20% on profit.

ANNEXURE D

Profitability projection for LED Bulbs Manufacturing unit (Rs in Lakhs)

Particulars	Yr 1	Yr 2	Yr3	Yr 4
A. Production of LED Bulbs at 100% capacity (in units)	30000	30000	30000	30000
Capacity utilisation %	70%	80%	90%	90%
Production at capacity utilisation(in units)	21000	24000	27000	27000
LED 9W - 2/3 of capacity utilisation(units)	14000	16000	18000	18000
LED 12W - 1/3rd of capacity utilisation(units)	7000	8000	9000	9000
A.Sales LED Bulbs				
1. 9W LED (Ordinary + Inverter)	18.03	20.60	23.18	23.18
2.12W LED(Ordinary + Inverter)	14.09	16.10	18.11	18.11
Total Sales(1+2)	32.11	36.70	41.29	41.29
B.Cost of Production				
RM Cost for 9W LED(Ordinary + inverter)=	13.02	14.88	16.74	16.74
RM Cost for 12W LED(Ordinary + inverter)=	10.15	11.60	13.05	13.05
Total RM Cost	23.17	26.48	29.79	29.79
Packing Materials at 1% of RM Cost	0.23	0.26	0.30	0.30
Wages and Salaries (2 persons Rs.300 each per day)	1.8	1.8	1.8	1.8
Power(at 200 units per month @ Rs.5/-)	0.08	0.10	0.11	0.11
Conveyance (1% of sales)	0.32	0.37	0.41	0.41
Misc. Expenses(Rs.1000/- p.m)	0.12	0.12	0.12	0.12
Cost of Production(B)	25.73	29.13	32.53	32.53
Gross Profit(A-B)	6.39	7.57	8.76	8.76
Depreciation 10% on Rs.50000/-	0.05	0.05	0.05	0.05
Interest	0.18	0.22	0.04	0
Cost of Sales	25.96	29.40	32.62	32.58
Net Profit	6.16	7.30	8.67	8.71
Tax@20%	1.23	1.46	1.73	1.74
Net Profit after tax	4.92	5.84	6.93	6.97
Cash Surplus	4.97	5.89	6.98	7.02

Annexure E
Interest Calculation

Loan amount Rs.4,50,000/-

Grant – Rs.1,50,000/-

Repayment Period – 36 Months including holiday period of 3 months

Interest rate – 12% on the Net loan amount i.e.(loan amount – Grant)

Date	Particulars	Debit	Credit	Balance	Interest*	Interest Per annum	Principal repayment P.A.
01.09.21	To loan	450000		450000			
1	By repayment		0	450000	3000.00		
2			0	450000	3000.00		
3			0	450000	3000.00		
4			13700	436300	3000.00		
5			13700	422600	2863.00		
6			13700	408900	2726.00	17589	41100
7			13700	395200	2589.00		
8			13700	381500	2452.00		
9			13700	367800	2315.00		
10			13700	354100	2178.00		
11			13700	340400	2041.00		
12			13700	326700	1904.00		
13			13700	313000	1767.00		
14			13700	299300	1630.00		
15			13700	285600	1493.00		
16			13700	271900	1356.00		
17			13700	258200	1219.00		
18			13700	244500	1082.00	22026	164400
19			13700	230800	945.00		
20			13700	217100	808.00		
21			13700	203400	671.00		
22			13700	189700	534.00		
23			13700	176000	397.00		
24			13700	162300	260.00		
25			12300	150000	123.00		
26	Grant @30%		150000	0		3738	244500
		450000	450000			43353	450000

*Interest calculated on reducing balance outstanding.

*Interest assumed to be serviced every month on the due date.

Prepared by S.Gopal Ratnam
Consultant – BPF TNRTTP