DETAILED PROJECT REPORT
ON
ENERGY COST REDUCTION WITH TRANSLUCENT SHEET
(ALWAR OIL MILL CLUSTER)

ENERGY IS LIFE
BEE
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Bureau of Energy Efficiency (BEE)

Prepared By

CII
Confederation of Indian Industry

Reviewed By

ISTSL

ENERGY COST REDUCTION WITH TRANSLUCENT SHEET

ALWAR OIL MILL CLUSTER

BEE, 2011

Detailed Project Report on Translucent sheets in Oil Mills

Oil Mill SME Cluster, Alwar (Rajasthan) (India)

New Delhi: Bureau of Energy Efficiency

Detail Project Report No.: **ALW/BLDG/TRS/12**

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We take this opportunity to express our appreciation for the excellent support provided by Foundry Unit Owners, Local Service Providers, and Equipment Suppliers for their active involvement and their valuable inputs in making the program successful and in completion of the Detailed Project Report (DPR).

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CII – AVANTHA Centre for Competitiveness for SMEs
Confederation of Indian Industry
Chandigarh

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List of Abbreviations

BEE	**Bureau of Energy Efficiency**
SME	**Small and Medium Enterprises**
DPR	**Detailed Project Report**
GHG	**Green House Gases**
PF	**Power Factor**
EEF	**Energy Efficient Motor**
CDM	**Clean Development Mechanism**
DSCR	**Debt Service Coverage Ratio**
NPV	**Net Present Value**
IRR	**Internal Rate of Return**
ROI	**Return on Investment**
MT	**Metric Tonne**
SIDBI	**Small Industries Development Bank of India**

EXECUTIVE SUMMARY

Confederation of Indian Industry is executing BEE-SME program in Alwar Oil Mill Cluster, supported by Bureau of Energy Efficiency (BEE) with an overall objective of improving the energy efficiency in cluster units.

Alwar Oil Mill cluster is one of the largest Oil Mill clusters in India; accordingly this cluster was chosen for energy efficiency improvements by implementing energy efficient measures / technologies, so as to facilitate maximum replication in other Oil Mill clusters in India. The main energy forms used in the cluster units are grid electricity. In Oil Mill plant, electricity bill is almost 100% of total plant energy bill.

Most of the Industrial installations in the country have large lighting loads, resulting in high power consumption because of its usage in day time. This means loss and wastage of energy by electricity boards as well as for Oil Mill units. This can be taken care by translucent sheet for effective utilization of natural light.

Implementation of translucent sheet will reduce the running cost of energy. It helps in reducing the electricity bill amount by availing the benefit of switching off the lamps at day time.

Implementation of translucent sheet in oil mill will reduce power consumption from the Rajasthan Electricity Board.

Project implementation will lead to reduction in electricity bill by Rs. 0.017 Lakh per year.

Opaque sheets

Rated Power of fluorescent lamps = 55 W

Rated Power of in-candescent lamps = 100 W

Running hrs	= 8 hrs/day
Lighting area covered	= 90m^2
Lighting load per 10 m^2	= 100 W
Running hours	= 2400 hrs/year
Energy saving	= 900 W x 8 hrs/day
	= 7.2 kWh /day
Monetary saving	= 7.2kWh/day x300 days/yr Rs. 4.8/kWh
	= Rs. 9700.0
Investment required	= Rs. 16254.0

The total investment, debt equity ratio for financing the project, monetary savings, Internal rate of return (IRR), Net present value (NPV), Return on investment (ROI) etc for implementing translucent sheet in place of opaque sheets is furnished in Table below;

S. No.	Particular	Unit	Value
1	Project cost	Rs	16254.0
2	Monetary benefit	Rs	9700.0
3	Debit equity ratio	Ratio	3:1
4	Simple payback period	Months	20
5	NPV	Rs	8621.0
6	IRR	%age	33.5
7	ROI	%age	60
8			
9	DSCR	Ratio	1.34
10	Co_2 Reductions	T/yr	1.9

The projected profitability and cash flow statements indicate that the project implementation will be financially viable and technically feasible.

ABOUT BEE'S SME PROGRAM

Bureau of Energy Efficiency (BEE) is implementing a BEE-SME Programme to improve energy performance in 29 selected SMEs clusters. Alwar Oil Mill Cluster is one of them. The BEE's SME Programme intends to enhance energy efficiency awareness by funding/subsidizing need based studies in SME clusters and giving energy conservation recommendations. For addressing the specific problems of these SMEs and enhancing energy efficiency in the clusters, BEE will be focusing on energy efficiency, energy conservation and technology up gradation through studies and pilot projects in these SMEs clusters.

Major Activities in the BEE - SME Program are furnished below:

Energy Use and Technology Audit

The energy use technology studies would provide information on technology status, best operating practices, gaps in skills and knowledge on energy conservation opportunities, energy saving potential and new energy efficient technologies, etc for each of the sub sector in SMEs.

Capacity Building of Stake Holders in Cluster on Energy Efficiency

In most of the cases SME entrepreneurs are dependent on the locally available technologies, service providers for various reasons. To address this issue BEE has also undertaken capacity building of local service providers and entrepreneurs/ managers of SMEs on energy efficiency improvement in their units as well as clusters. The local service providers will be trained in order to be able to provide the local services in setting of energy efficiency projects in the clusters.

Implementation of Energy Efficiency Measures

To implement the technology up gradation projects in clusters, BEE has proposed to prepare the technology based detailed project reports (DPRs) for a minimum of five technologies in three capacities for each technology.

Facilitation of Innovative Financing Mechanisms for Implementation of Energy Efficiency Projects

The objective of this activity is to facilitate the uptake of energy efficiency measures through innovative financing mechanisms without creating market distortion.

1 INTRODUCTION

1.1 Brief Introduction about the Cluster

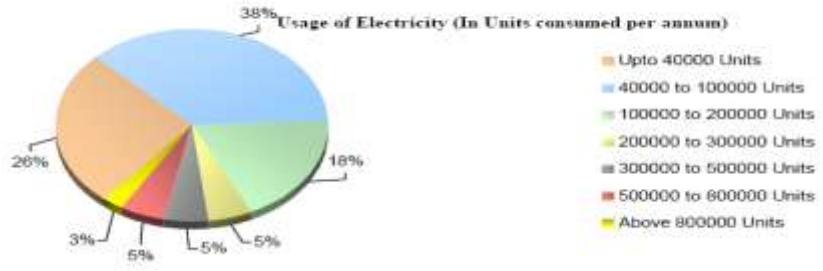
Alwar SME Cluster is one of the largest Oil Mill clusters in India, which is famous for manufacturing of Mustard Oil. The nearest airport is at Jaipur, which is 150 KM from Alwar by road.

There are approximately 60 Oil Mill units in this cluster which are engaged in manufacturing of mustard oil (Kacchi Ghani and Pakki Ghani). There are more Oil Mill units coming up in Alwar.

Energy used for oil extraction is electricity. In Alwar and Sawaimadhopur region there is shortage of power and that leads to less production of oil. Because of the power shortage some of the very small scale units of cluster are planning to shut their plant.

Table 1.1 Details of Annual Energy Consumption Scenario at Alwar Oil Mill Cluster

- USAGE OF ELECTRICITY (IN UNITS CONSUMED PER ANNUM)



Electrical energy consumption in Alwar and Sawaimadhopur units lies in range of around 186 Lakhs kWh for processing of 1240000 Quintal of Mustard Seed. Oil units in Alwar & Sawaimadhopur regions are having Specific Energy Consumption in range of 10-15 kWh/Quintal of mustard seed processed.

Energy Usage Pattern

Average monthly electricity consumption in Oil Mill plants ranges from 0.5 lakh to 2 lakh kWh depending on the size of the plant.

Classification of Units

The Oil Mill units can be categorized into following three types based on capacity of production

- Large scale units
- Medium scale units
- Small scale units

Production Wise Unit Breakup

Alwar Oil Mill cluster can be broken into three categories viz. small, medium and large size unit. Table 1.2 shows that production wise breakup of Alwar cluster.

Table 1.2 production wise unit breakups

S. No.	Type of Unit	Production Capacity
1	Large scale unit	More than 120 MT
2	Medium scale unit	50 to 120MT
3	Small scale unit	Less than 50 MT

Products Manufactured

Different types of products manufactured in Alwar SME cluster are as shown in Table 1.3 below.

Table 1.3 Product Manufactured

S. No	Type of Product	% Share
1	Pakki Ghani	70
2	Kacchi Ghani	30

Production Process of Oil Mill:

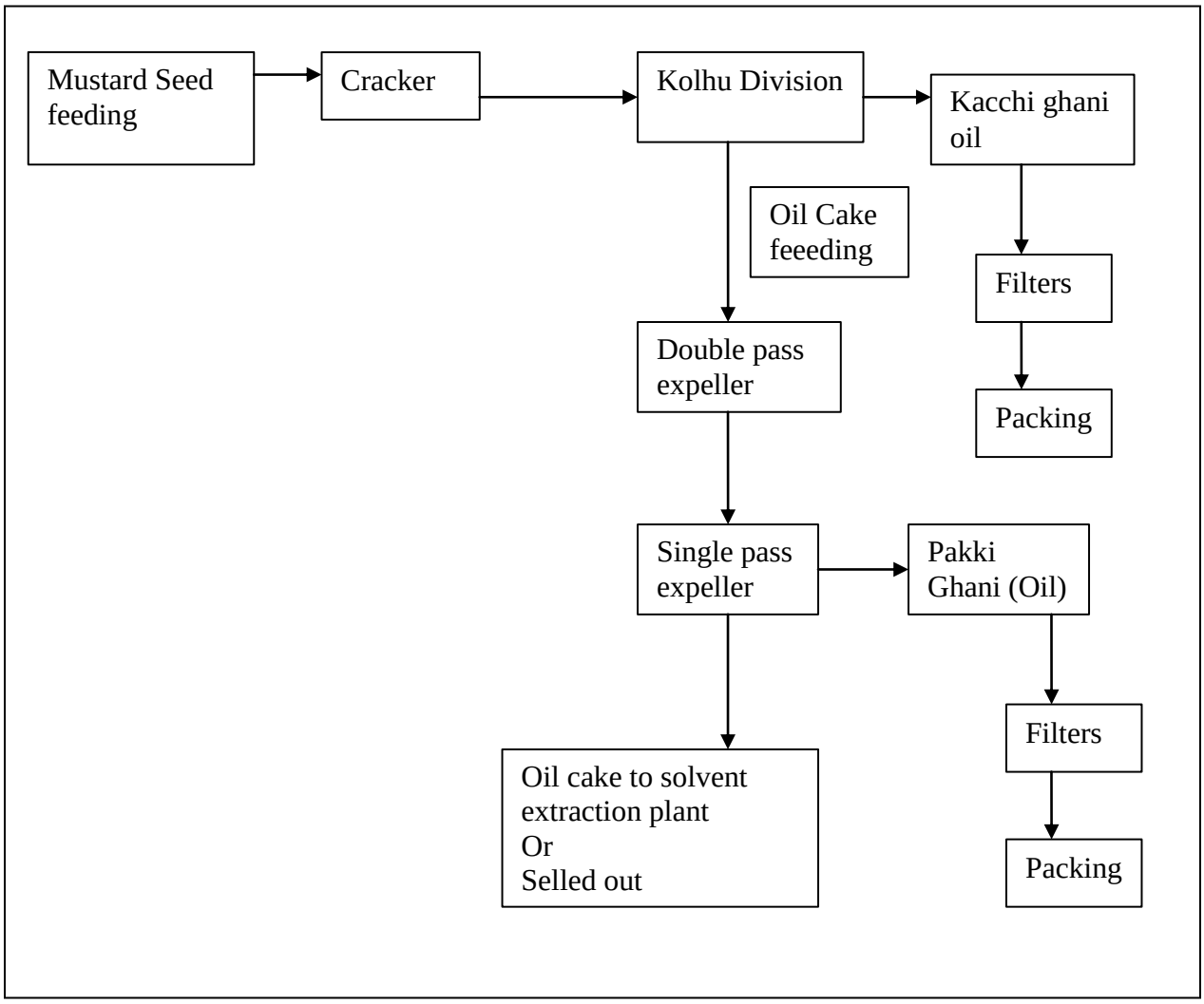


Figure 1.1 Process flow diagram of Oil Mill Units

Mustard Oil Extraction

Raw material used for oil production is mustard seeds, which is purchased from Local Mandi of Alwar and Sawaimadhopur.

Seed cracker cracks the crop of mustard in fine pieces so that it can be further processed in Kolhu and Expeller. To get oil from raw mustard seed, it is first given to Kolhu and the waste (oil cake) from the kolhu is given to Expeller which extracts more oil from the same oil cake. Remaining oil cake is given to solvent extraction plant or sold out in market. Filtered oil goes to oil filling plant where oil is filled in bottles as per requirement and finally packed in cartoon to send at required places across India.

Technology used for process involve expellers (Double pass & Single pass), Kolhus run by motors instead of any animal. Single motors run many kolhus, which are connected on same shaft by belts. After extracting oil from machines, it is sent for filtration to fine filter cloth

1.2 Energy performance in existing situation

Oil units in Alwar & Sawaimadhopur regions are having Specific Energy Consumption in range of 10-15 kWh/Quintal of mustard seed processed.

1.2.1 Average Production

Annual production in typical unit in Alwar Cluster is given in Table 1.4.

Table 1.4 Annual Production of a Typical Unit

S. No	Type of Product	Production MT/annum
1	Mustard Oil	122691

1.2.2 Energy Consumption

Energy consumption (electrical) in a typical Oil Mill plant for different types of products is given in Table 1.5 below:

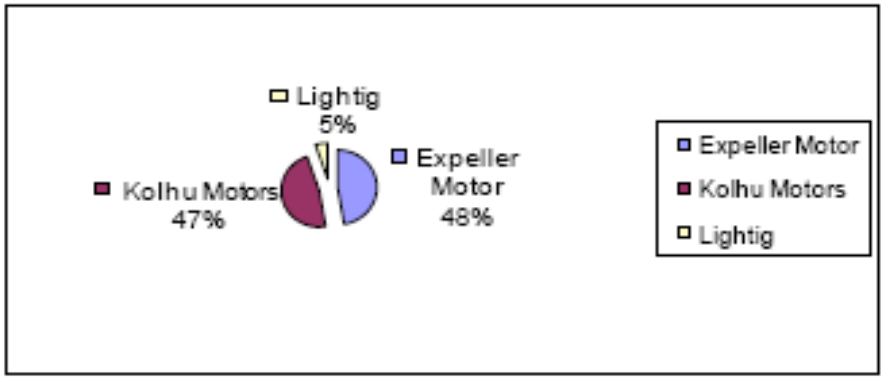


Table 1.5 Annual Energy Consumption

Annual energy consumption is around 186 Lakh Units for processing of around 1240000 quintal of mustard.

Table1.6. Annual Energy Consumption

S. No	Type of Fuel	Unit	Value	Contribution in equivalent energy terms (%)
1	Electricity	Mwh/year	18.6	100

1.2.3 Specific Energy Consumption

Specific electrical energy consumption is 10 to 15 kWh for quintal of mustard seed processing in Oil Mill industry

1.3 Proposed Technology/Equipment

1.3.1 Description about the existing technology

Lighting load consumes considerable amount of energy in any oil mill.
Artificial light consumes good amount of energy as it runs continuously for 8- 10 hours in daytime. This amount of energy can be reduced by installing translucent sheet for maximum utilization of natural light in the plant area. In plant section, there are many fluorescent lamps, incandescent lamps which can be replaced by translucent sheet. Not only has this but continuous running of lamps increased its failure rate, which again investment of money.
During day time there is a possibility of providing translucent sheets in the shed and avoid operation of these lamps during day time. This will result in two benefits:

1. Reduction in energy consumption
2. Reduction in failure rate of lamps

Installation of Translucent sheet will increase lux level in plant and will reduce the power consumption of plant.

1.4 Establishing the Baseline for the Proposed Technology

Presently all the Oil Mill plants at Alwar are operating with shades in oil mill, which obstruct the natural light.

Advantages:-

- Good strength
- Low cost
- No harmful constituents
- Day light utilisation
- Improvement in lux level
- Weather and storm proof
- Easy to install
- Eco friendly and economical
- Corrosion resistant

1.5 Barriers in adoption of proposed technology

1.5.1 Technological Barrier

- Lack of awareness and information of the loss in terms of efficiency for old expellers
- In this cluster, like many others, there is lack of leadership to take up the energy efficiency projects in the plant.

1.5.2 Financial Barrier

Implementation of the proposed project activity requires an investment of Rs. 450/m^2.This is a significant investment and not commonly seen in the small cluster for the implementation of energy efficiency projects.

1.5.3 Skilled Manpower

In Alwar Oil Mill cluster, the availability of skilled manpower is one of the limitations, this issue gets further aggravated due to more number of Oil Mill units as compared to the availability of skilled manpower. One local technical person available at Alwar takes care of about 2 to 3 Oil Mill units. For major equipments of Oil Mill units like Expeller or Kolhu for maintenance or the repair works of these equipments take care by the equipment suppliers itself.

2 PROPOSED TECHNOLOGY

2.1 Detailed Description of Technology

2.1.1 Description of Technology

Existing scenario of artificial lighting in plants of Alwar cluster is poor. In almost all of the units artificial light are being used.

Translucent sheet convert the direct beam radiation from sun into diffused radiation.
Diffused radiation are very good for seeing purposes and will not increase the temperature much because it will convert some of the heat energy of sun beam into light.
Its properties are its transparent and its thermoplastic nature gives alternative to glass.

2.1.2 Technology Specification

For implementation of the proposed project, old sheds must be replaced with translucent sheet in the Oil Mill plant.

2.1.3 Suitability or Integration with Existing Process and Reasons for Selection

This is the simplest and widely accepted measure for energy cost reduction in all the industries. It does not affect the process but improves the process efficiency since these types of sheets have high efficacy.

2.1.4 Availability of Technology

Now days when energy cost is high, it is poor practice to use artificial light in day time. As far as technology is concerned translucent sheets are available in local/ national market. It is well proven technology which is adopted in many of the other similar and dissimilar units. Local vendors can arrange translucent sheet at order. Local service providers are also available at Alwar. More details of service provider are given in

annexure 5.

2.1.5 Source of Technology

The main source which has taken the initiative to create the awareness for implementation of this project by providing the benefit to the consumers in terms of rupees is the State Electricity Board. With use of translucent sheet, State Electricity Distribution Board will be able to deliver more power to other industry.

2.1.6 Terms and Conditions after Sale

Warranty period of one year will be provided from the date of invoice against any manufacturing defects.

2.1.7 Process down Time during Implementation

Technology provider will bring the complete setup for the proposed project from their site and make all the arrangements for implementation at the client's site.

2.2 Life Cycle Assessment

Life of the proposed translucent sheet will be having longer life which depends on the operating conditions and maintenance at client's side.

2.3 Suitable Unit for Implementation of the Identified Technology

For estimation of the saving potential on implementation of this project, here the Oil Mill plant engaged in producing mustard oil, having old expeller can be considered.

3 ECONOMIC BENEFITS FROM PROPOSED TECHNOLOGY

3.1 Technical Benefits

3.1.1 Electricity savings per year

Project for Installation of Translucent Sheets and replace/switch off light fittings during day time in Oil Mills at Alwar.

3.1.2 Improvement in product quality

This project is not contributing to any improvement in product quality, but frequent maintenance can be reduced.

3.1.3 Improvement in production

This project is not contributing for increasing in production in Oil Mill plant. But it reduces the power consumption for producing same amount of oil.

3.1.4 Reduction in raw material consumption

Raw material consumption will be the same after the implementation of the proposed project.

3.1.5 Reduction in other losses

This project does not contribute to any reduction in any loss.

3.2 Monetary Benefits

Annual monetary savings with installation of translucent sheet for total lighting area of $90m^2$ will be Rs. 9700.0 per year.

3.3 Social Benefits

3.3.1 Improvement in Working Environment in the Plant

There is no significant impact of this project in the working environment in the plant.

3.3.2 Improvement in Skill Set of Workers

The technical skills of workers will definitely improve. Training on the regular maintenance will help in improving the technical understanding of the workers.

3.4 Environmental Benefits

The major GHG reduction would be in Co_2 reduction. Emission reductions are estimated at 1.9 tons of Co_2 per annum.

4 INSTALLATION OF THE PROPOSED TECHNOLOGY

4.1 Cost of Technology Implementation

Table 4.1 Details of Proposed Technology Installation Cost

S. No.	Particular	Cost (RS)
1	Equipment cost (Rs/M^2)	400 to 450
2	Other cost(% of material cost)	20
3	Misc(% of material cost)	20
4	Total Cost (for 90m^2 lighting area)	16254

4.1.1 Technology Cost

Cost of the translucent sheet is about Rs.11610 for 90 m^2 lighting area and 27 m2 of Sheet Area.

4.1.2 Other Cost

Other costs required will be Rs 2322.0 which includes taxes, commissioning, manpower cost, transportation etc and other miscellaneous costs will be Rs 2322.0 as the contingency amount.

4.2 Arrangements of Funds

4.2.1 Entrepreneur's Contribution

Entrepreneur will contribute 25% of the total project cost which is Rs. 4063.5.

4.2.2 Loan Amount

Remaining 75% cost of the proposed project will be borrowed from bank, which is Rs. 12190.5

4.2.3 Terms & Conditions of Loan

The interest rate is considered at 10% which is SIDBI's rate of interest for energy efficient projects. The loan tenure is 4 years excluding initial moratorium period is 6 months from the date of first disbursement of loan.

4.3 Financial Indicators

4.3.1 Cash Flow Analysis

Profitability and cash flow statements have been worked out for a period of 5 years. The financials have been worked out on the basis of certain reasonable assumptions, which

are outlined below:-

- The Operation and Maintenance cost is estimated at 10 % of cost of total project with 5 % increase in every year as escalations.
- Interest on term loan is estimated at 10 %.
- Depreciation is provided as per the rates provided in the companies Act.

Based on the above assumptions, profitability and cash flow statements have been prepared and calculated in Annexure-3.

4.3.2 Simple Payback Period

The total project cost of the proposed technology is Rs.11610 for 90 m^2 lighting area and monetary savings due to reduction in electricity consumption is Rs.9700.0/year hence, the simple payback period works out to be 20 months.

4.3.3 Net Present Value (NPV)

The Net present value of the investment at 10% works out to be Rs.8621.0

4.3.4 Internal Rate of Return (IRR)

The after tax Internal Rate of Return of the project works out to be 33.5%. Thus the project is financially viable.

4.3.5 Return on Investment (ROI)

The average return on investment of the project activity works out at 60%.

Table 4.2 Financial Indicators of Proposed Technology

S No	Particular	Unit	Value
1	Simple Payback	Months	20
2	NPV	Rs.	8621.0
3	IRR	%age	33.5
4	ROI	%age	60

4.4 Sensitivity analysis in realistic, pessimistic and optimistic scenarios

A sensitivity analysis has been carried out to ascertain how the project financials would behave in different situations like when there is an increase in rupees savings or decrease in rupees savings. For the purpose of sensitive analysis, two following scenarios have been considered.

- **Optimistic scenario (Increase in monetary savings by 5%)**
- **Pessimistic scenario (Decrease in monetary savings by 5%)**

In each scenario, other inputs are assumed as a constant. The financial indicators in each of the above situation are indicated along with standard indicators.

Table 4.3 Sensitivity Analysis in Different Scenarios

Scenario	Monetary Benefit(Rs Lakh/year)	IRR (%)	NPV(in Lakh)	ROI (%)
Pessimistic	9215	31	7320	52
Base	9700	34	8621	60
Optimistic	10135	37	9923	69

4.5 Procurement and Implementation Schedule

Procurement and implementation schedule required for implementation of this technology is about 8 weeks and 0.5 weeks required as a process break down. Details of procurement and implementation schedules are shown in Table 4.4 below

Table 4.4 Procurement and Implementation Schedule

S. No.	Activities	Weeks						
		1	2	3	4	5	6	7
1	Identification of sheet area							
2	Planning and material order							
3	Procurement							
4	Commissioning							

ANNEXURES

Annexure -1: Energy audit data used for baseline establishment

S. No.	Particular	Unit	Value
1	Rated power of fluorescent lamp	W	50
2	Rated power of in-candescent lamp	W	100
3	Sheet area	m2	27

Annexure -2: Detailed Technology Assessment Report

S. No	Particular	Unit	Present situation	Proposed situation
1	Light Power consumption for 90m^2 lighting area	kW	0.9	nil
2	Running hrs	Hrs/day	8	-
4	Power saving	kW		0.9
5	Monetary saving	Rs/yr		9700.0

Annexure -3: Detailed Financial Calculations

Financials for BEE projects		
Name of Project	**Replacement of Opaque sheet by Translucent sheet**	
	Units	**Value**
Cost of equipments	Rs	11610.0
Saving Potential	Rs per year	9700.0
IRR	%	33.7
NPV	Rs	8621.0
ROE	%	60
Simple pay back period	Months	20

Assumptions			
Particulars	**Units**	**Value**	**Source**
Commercial Inputs			
Required Investment	Rs	16254.0	
O&M cost (5% of equipment cost)	Rs	580.500	
Acceleration in O&M cost per year	%	5%	
Debt/Equity ratio		3 to1	
Debt component of Investment	75%	12190.50	
Equity component of investment	25%	4063.50	
Interest on term loan	%	10%	SIDBI Lending rates
Loan tenure	Years	4	
Moratorium period	Months	6	
Depreciation rate (Companies act)	%	5.28%	
Depreciation rate (IT act)	%	80%	
Income tax rate	%	33.99%	

PROFITABILITY & IRR CALCULATIONS						
Particulars/ Years		1	2	3	4	5
Revenue						
Total saving	Rs	9700.00	9700.00	9700.00	9700.00	9700.00
Expenditure						
O&M Expenditure	Rs	580.50	609.53	640.00	672.00	705.60
Interest on term loan	Rs	1197.28	914.29	565.99	217.69	0.00
Book depreciation	Rs	613.01	580.64	549.98	520.94	493.44
Total expenses		2390.79	2104.45	1755.97	1410.63	1199.04
PBT	Rs	7309.21	7595.55	7944.03	8289.37	8500.96
Tax		0.00	2737.41	2847.64	2957.24	3021.78
PAT		7309.21	4858.13	5096.39	5332.13	5479.18

Cash Flow Statement						
		1	2	3	4	5
PAT	Rs	7309.21	4858.13	5096.39	5332.13	5479.18
Add: Depreciation	Rs	613.01	580.64	549.98	520.94	493.44
Add: Interest	Rs	1197.28	914.29	565.99	217.69	0.00
Net cash In flow	Rs	9119.50	6353.06	6212.36	6070.76	5972.62
Net cash out flow	Rs	-16254.00				
Net cash flow	Rs	-7134.50	6353.06	6212.36	6070.76	5972.62
	-16254.0	9119.50	6353.06	6212.36	6070.76	5972.62

IRR	34%					
NPV	8621.97					
ROI	160%					

CASH STATEMENT						
		1	2	3	4	5
Source (RS)						
Equity	4063.50					
Loan	12190.50					
PAT		7309.21	4858.13	5096.39	5332.13	5479.18
Depreciation		613.01	580.64	549.98	520.94	493.44
Total	16254.00	7922.22	5438.77	5646.37	5853.07	5972.62
Application						
Capital expenditure	16254.0					
Loan repayment		1197.28	914.29	565.99	217.69	0.00
Total	16254.0	1197.28	914.29	565.99	217.69	0.00
Net surplus	0.00	6724.94	4524.49	5080.38	5635.39	5972.62
Add: Opening balance	0		6724.94	11249.42	16329.80	21965.19
Closing balance	0	6724.94	11249.42	16329.80	21965.19	27937.81

TAX CALCULATION						
		1	2	3	4	5
PBT	Rs	7309.21	7595.55	7944.03	8289.37	8500.96
ADD: Book depreciation	Rs	613.01	580.64	549.98	520.94	493.44
SUB: IT Depreciation	Rs	9288.00	122.60	116.13	110.00	104.19
PBT&D	Rs	-1365.78	8053.59	8377.88	8700.31	8890.21
Tax	Rs	0.00	2737.41	2847.64	2957.24	3021.78

LOAN PAYMENT SCHEDULE (RS)							
YEARS	QUARTERS	BALANCE AT THE BEGNING OF QUARTER	QUARTER INTEREST	QUARTER'S PRINCIPEL PAYMENT	BALANCE AT THE END OF QUARTER	ANNUAL PRINCIPEL PAYMENT	ANNUAL INTEREST PAYMENT
1	1	12190.50	304.76	0.00	12190.50	1741.50	1197.28
	2	12190.50	304.76	0.00	12190.50		
	3	12190.50	304.76	870.75	11319.75		
	4	11319.75	282.99	870.75	10449.00		
2	1	10449.00	261.23	870.75	9578.25	3483.00	914.29
	2	9578.25	239.46	870.75	8707.50		
	3	8707.50	217.69	870.75	7836.75		
	4	7836.75	195.92	870.75	6966.00		
3	1	6966.00	174.15	870.75	6095.25	3483.00	565.99
	2	6095.25	152.38	870.75	5224.50		
	3	5224.50	130.61	870.75	4353.75		
	4	4353.75	108.84	870.75	3483.00		
4	1	3483.00	87.08	870.75	2612.25	3483.00	217.69
	2	2612.25	65.31	870.75	1741.50		
	3	1741.50	43.54	870.75	870.75		
	4	870.75	21.77	870.75	0.00		

DEPRECIATION SCHEDULE (RS)						
Depreciation as per companies act		1	2	3	4	5
Value of machine at the beginning of year		11610.00	10996.99	10416.35	9866.37	9345.42
Depreciation		613.01	580.64	549.98	520.94	493.44
Net value at the end of year		10996.99	10416.35	9866.37	9345.42	8851.98
Depreciation as per IT act		1	2	3	4	5
Value of machine at the beginning of year		11610.00	2322.00	2199.40	2083.27	1973.27
Depreciation		9288.00	122.60	116.13	110.00	104.19
Net value at the end of year		2322.00	2199.40	2083.27	1973.27	1869.08

Annexure:-4 Procurement and implementation schedule

S.NO.	Activities	Weeks						
		1	2	3	4	5	6	7
1	Identification of sheet area							
2	Planning and material order							
3	Procurement							
4	Commissioning							

Annexure:-5 Break-up of Process down Time

S No	Activities	Week		
		1/7	2/7	3/7
1	Dismantling of sheet			
2	Installing New translucent sheet			
3	Testing & Trial			

Annexure -6: Details of technology service providers

Energy Conservation measure	Vendor	Details of Local vendor / service provider
1. Translucent sheet	Intec FRP Products	www.intecfrpindias.com

Annexure–7: Quotations or Techno-commercial bids for new technology/equipment

INTEC FRP
PRODUCTS

Plot No. 560, Phase - II, G.I.D.C. Estate, Opp. Vatva Railway Station, Vatva, AHMEDABAD -382445
Email : intekfrp@yahoo.co.in • Websit : www.intecfrpindias.com
Ph. : (079) 25831573, Telefax : (079) 25894542

Ref. No. **Date :**

Date:- 31-10-2011

To,
CII-AVANTHA CENTRE FOR COMPETITIVES
Confederation of Indian Industry
Chandigarh.

Sub:- quotation for frp sheet

dear sir,

Sorry for the late response.i would like to quote for your enquiry.
for ,A.C.corrugated sheet
thickness
1.5mm :-Rs.430 per sq.m
2mm :- Rs.550 per sq.m

product is machine made and having excellent mechnical and weather resistance properties.
barcol hardness 45
special weather coat for weather resistance.
uniform finishing.

excise extra 10.3%

vat 2% cst against form c'
else vat 5% extra

delivery within seven to ten days after reciept of yr cnfrm order.

If you have any query feel free to contact us.

thanking you,
for,Intec Frp Products
Ms.hardi
H.D. Pandya

Annexure 8

To be submitted by Indian company/firm
Seeking financial assistance under
TIFAC-SIDBI Revolving Fund for Technology Innovation

सृजन **(SRIJAN)**
Application Format

PART A: Brief about the Unit

1.1 Particulars of company / firm

1	Name	
2	Constitution	
3	Year of incorporation / commencement of operations	
4	Address of registered office and site of operations	
5	Main Promoter(s) / contact details	

1.2 Particulars of Promoters

Name (age)	Educational/ Professional qualification	No of years of professional experience	No of years of entrepre-neurial experience	Stake in the firm / company (%)

1.3 Present line of business and Technology / product successfully developed by the entity in the past:

1.4 Technology know-how Partner (**name, designation with educational and professional background, affiliation address, telephone, fax, e-mail etc.)**:

PART B: Technical Information

2 Project title:

2.1 Background:

2.2 Project objectives :

2.3 Major Targets :

2.4 Process / Products proposed to be developed under the project along with specifications etc.:

2.5 Technology development/demonstration in Product/Process

Technology development:

(i) Process:

(ii) Product:

2.5.1 Detailed technology description:

2.6 What is the specialty / novelty / uniqueness / innovation about the technology:

2.7 Work already carried out for proof of concept / technology validation:

2.8 Whether the technology has been already patented. If yes, provide the details:

2.9 Process flow-charts / schematic diagram etc.:

2.10 Raw materials and their availability:

2.11 Comparative advantages / disadvantages over the conventional/ emerging technologies and brief comments on competitions / challenges:

2.12 Techno-economics, cost benefit analysis and demand statistics in next 2/3 years:

2.13 Environmental Impact, if any:

2.14 Work Plan:

2.14.1 Project Duration (in months):

2.14.2 Time schedule indicating important activities/milestones & duration (*bar-chart)*:

2.15 Deliverables of the project:

2.16 List of existing facilities already available for the proposed project (land, building, machinery, software, manpower, utilities etc.)

PART C: Financial information

3.1 Total Project Cost:

Project head	Area / Qty./ Specifications/ Capacity	Company/Firm Contribution (`Lakh)	Contribution from Fund (`Lakh)	Total Cost (`Lakh)
Cost of construction / augmentation of factory shed for the project				
Technology Know-how fee / patent / licensing				
Equipment / Machinery / Utilities				
Consumables / Raw Materials				
Equipment for Testing & Evaluation / Quality Control				
Manpower Salaries				
Marketing related expenses				
Working Capital Margin				
Others (pl specify)				
Contingency				
Total				

3.2 Means of Finance:

Means of finance	Amount (`lakh)
Additional Share capital	
Unsecured loans from …..	
SIDBI Assistance	

Assistance sought from the Fund	
Others (pl specify)	
Total	

3.3 Detailed Break-up of following Heads of Project Cost with equipment details (in tabular form):

3.3.1 Capital Equipment / plants & machinery
3.3.2 Testing & Laboratory Equipment
3.3.3 Manpower Salaries
3.3.4 Consumables/Raw Materials

3.4 What makes the technology different from existing ones and advantage in terms of business opportunities?

3.5 Whether this proposal has been submitted to any other agency for funding support (if yes, give details)

3.6 Financial performance: In case of existing entity, brief business highlights given below (*Pl. enclose last FY audited accounts with auditors report)*.

(` Lakhs)

Particular	**FY ….**	**FY …..**	**Particular**	**FY …..**	**FY ….**
Revenue			Share Capital (promoters)		
EBDITA			Share capital (others)*		
Profit After Tax (PAT)			Net worth/ Accumulated losses		
Initial/ product dev expenses not written off			Bank term loans		
Net Profit Margin (%)			Unsec loans – promoters		
Debt Equity Ratio (DER)			Unsec loans – others		
			Bank borrowings –WC		

**please provide details*

3.7 Credit/ Banking facilities from SIDBI / other banks/ FIs/ PE or VC or Angel investors in respect of customer (` Lakh)

PE/ VC/ Angel inv/ Bank, branch	Facility	Sanc amt	Outstanding

3.7.1 **Whether any over dues in any banking credit facilities by the applicant enterprise/ associate concerns in past 2 years.**

3.7.2 **Whether any of the accounts of the enterprise/ associate concern classified as NPA/ any restructuring done during past 3 years or any OTS done ever.**

3.7.3 **Whether any default in promoters' personal/ consumer loans/credit card payments, etc.**

3.8 Tentative Business projections (in Lakh)

Particular	First Year		Second Year		Third year		Fourth year	
	H1	H2	H1	H2	H1	H2	H1	H2
Sales								
PAT								

4. Key strengths and risk factors

5. Any other relevant information

DECLARATION

I/We certify that all information furnished by me/ us above and in the appendix/annexures/ statements and other papers enclosed is true; I/we have no borrowing arrangements for the unit with any bank / FI except as indicated in the application; that there are no overdues / statutory dues/government enquiry/proceedings/prosecution against the unit/associate concerns/ promoters/directors except as indicated in the preliminary information; that no legal action has been/ is being taken against the unit/associate concerns/promoters/directors; that I/ we shall furnish all other information that may be required by SIDBI in connection with my/our application and I/ We have no objection to your furnishing the information submitted by me/ us to any agency as you may deem fit in connection with consideration of the assistance. We have no objection to SIDBI/ its representatives making suitable enquiries while considering the application.

Place:

Signature

Date: **Name & Designation with Seal**

Annexure I

Details of Associate Concerns

Name , Address & products manufactured	**Existing since**	**Name & Address of existing Banker (s)**	**Facilities Enjoyed**	**Share holding of the main promoter(s) of applicant unit**

Annexure II

Particulars of machinery proposed for the project

Name of machinery, (model / specification)	**Name of manufacturer, contact person, e-mail address telephone no**	**Lead time for delivery Of machinery**	**Invoice price (for Indigenous machinery) / CIF price (for imported) (Rs. lakh)**	**Purpose /use of machine.**	**Basis of selection of supplier**	**Remark s reg. After Sale Service etc.**
Translucent sheet	Attached Doc.	1 Month	Refer attached document	To Improve energy Efficiency	Techno-commercial competitiveness.	

Annexure III

Details of Misc. Assets / equipment Proposed

S.No.	**Name of item**	**Supplier**	**Cost (Rs. lakh)**	**Purpose/ use of MFA**	**Remarks**

Annexure IV

Profitability projections for the unit/company as whole:

S. No.	Items	Actuals for previous years	Y1	Y2	Y3	Y4	Y5	Total
1	Total income		9700.00	9700.00	9700.00	9700.00	9700.00	9700.00
2	Raw material							
	Power and fuel							
	Wages and salaries							
	Selling expenses							
	Other expenses		2390.79	2104.45	1755.97	1410.63	1199.04	2390.79
	Total cost		2390.79	2104.45	1755.97	1410.63	1199.04	2390.79
3	Profit before depreciation, interest and taxes (PBDIT)		7309.21	7595.55	7944.03	8289.37	8500.96	7309.21
4	Interest on term loan		1197.28	914.29	565.99	217.69	0.00	1197.28
5	Interest on working capital		-	-	-	-	-	-
6	Interest on unsecured land		-	-	-	-	-	-
7	Depreciation		613.01	580.64	549.98	520.94	493.44	613.01
8	PBT		7309.21	7595.55	7944.03	8289.37	8500.96	7309.21
9	Tax		0.00	2737.41	2847.64	2957.24	3021.78	0.00
10	PAT		7309.21	4858.13	5096.39	5332.13	5479.18	7309.21
11	Dividends/ withdrawal							
12	Cash accruals							
13	Debt service coverage ratio		0.748	0.870	1.156	2.592		
	Av. DSCR	**1.34**						

Annexure V
CHECK LIST of documents to be Submitted along with the application

S. No	Documents	Y/N	Reasons for Non-Submission
1	SSI Regn. / CA certificate certifying SSI status.		
2	Certified copies of Memorandum & Articles of association / Partnership Deed.		
3	Audited financial results for the last three years of Applicant unit.		
4	Copies of lease deed / sale deed on which the unit is situated.		
5	Copies of sanction letters from commercial banks/ FIs which have sanctioned assistance to the unit.		
6	NOC from pollution control board/consent letter, if applicable.		
7	IT Returns/Assessment orders/Sales tax returns of the Applicant Unit/ promoters/directors for 2years.		
8	List of existing plant and machinery.		
9	Competitive quotations for machines and Misc.fixed assets proposed to be acquired under the scheme.		
10	Duly signed latest net worth statements of promoters/directors & guarantors in SIDBI format;In case of guarantors please furnish, Name, Age,Father's/Husband's name, residential address.Details of similar guarantee, if any, given to other institutions.		
11	2 sets of photographs along with signatures of all promoters/directors/guarantors duly certified by a Bank or Gazetted Officer.		
12	Audited financial results for last three years for each associate concerns. If applicable.		
13	Copy of title deed of collateral security and valuation report.		

Bureau of Energy Efficiency (BEE)
(Ministry of Power, Government of India)
4th Floor, Sewa Bhawan, R. K. Puram, New Delhi – 110066
Ph.: +91 – 11 – 26179699 (5 Lines), Fax: +91 – 11 – 26178352
Websites: www.bee-india.nic.in, www.energymanagertraining.com

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CII – AVANTHA Centre for Competitiveness
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Sector 31-A, Chandigarh - 160030
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