

MODEL DETAILED PROJECT REPORT

ESTABLISHMENT OF BIOMASS BRIQUETTES MANUFACTURING UNIT

UNDER UTTAR POORVA TRANSFORMATIVE INDUSTRIALIZATION SCHEME (UNNATI), 2024



सत्यमेव जयते

उद्योग संवर्धन और आंतरिक व्यापार विभाग

DEPARTMENT FOR
PROMOTION OF INDUSTRY AND
INTERNAL TRADE

DEPARTMENT FOR PROMOTION OF INDUSTRY AND INTERNAL TRADE
MINISTRY OF COMMERCE & INDUSTRY
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1. Introduction

a. About the project

Briquetting is the technology to convert all types of agricultural and forestry waste into solid fuel. Briquettes are formed in cylindrical logs using high mechanical pressure without the use of chemical or binder. The product is a replacement to conventional fossil fuels and can be used across various manufacturing industries such as boilers, furnaces and kilns. Bio-Briquette is an eco friendly solid biofuel which helps to reduce pollution, contributing to greener environment and save worthy foreign exchange. Briquetting works on the basic concept of "Wealth from Waste". The briquettes are used for energy generation helping farmers to earn money from the waste. Briquetting of residues takes place with the application of pressure, heat and on the loose materials to produce the briquettes. No addition of any binder / chemicals is required so it is 100 % natural.

b. Global Scenario

The demand for wooden furniture is higher in densely populated cities of Pakistan i.e. Lahore, Multan, Karachi, Peshawar, Quetta, Rawalpindi and Islamabad, making all these cities viable for business. The rapid change in consumer buying behaviour along with the presence of large-scale manufacturers is one of the primary factors driving the wooden furniture market growth rate. Also, the market is largely driven by the increase in outdoor furniture demand. While the rapidly rising spending on new residential construction and technological advancements is one of the major factors driving the growth of the wooden furniture market.

Data Bridge Market Research analyses that the wooden furniture market, which was USD 413.38 billion in 2022, will reach USD 644.10 billion by 2030, and is expected to undergo a CAGR of 5.7% during the forecast period. "Hardwood" dominates the product type segment of the wooden furniture market by because hardwoods will last longer than softwoods, they're suitable for a large range of applications including construction, joinery, high-quality furniture and flooring

c. Indian Scenario

The Biomass Briquette Fuel Market was worth \$785.66 million and is expected to grow at a rate of about 7.25% from 2023 to 2030. Speaking of production capacity, India has approximately 141 million hectares of arable land and agricultural output is around 800 million tones, which in itself generates 750 million tones waste. Even after deducting 450 million tones, which is used as fodder, 300 million tones could be used for biomass generation. Crop residues which are not used as animal fodder, such as cane trash, paddy straw, coconut stalks, branches and mustard waste, are estimated to total around 75 million tons per annum. An estimate of h demand can be understood from fact and stats that Sustainable Agrarian Mission mandates use of Agro Residue in Thermal Power Plants, the mission's main objectives are to reduce stubble burning and the carbon footprint of thermal power plants using agro-based residue, mostly in the form of biomass briquettes. The mission mandates that all thermal power plants in the country use between 5-10% of biomass alongside coal to produce power. According to India's power ministry estimates, around 95,000 tons of biomass briquettes are required each day for co-firing in thermal production units, with India's current manufacturing capacity is around 7,000 briquettes per day.



NTPC, a state-run thermal power producer, burns around 25,000 tons of coal daily for power generation at its plant in Dadri (Uttar Pradesh). It has been able to co-fire only around 20,000 tons of biomass briquettes till mid-2022. The situation is similar in the case of other thermal power plants.

d. State Profile

e. Sector Overview

Fuel is the primary need for any country that whose backbone lies in the Industrial sector. More and more exhaustible sources of energy are diminishing each day. As a result, there is an immediate need to adopt new sources of energy which can help sustain the economic growth without any negative repercussions.

All the biomass and wood wastes are collected in large storage units and are recycled to produce solid fuel that can be used to heat industrial boilers. This is a renewable source of energy and is perfect in countries that produce tones of agriculture and forest waste each year. Every year millions of tons of agricultural waste are generated. These are either non-used or burnt inefficiently in their loose form causing air pollution. Handling and transportation of these materials is difficult due to their low bulk density. These wastes can provide a renewable source of energy by converting into high-density fuel briquettes without addition of any binder. Not only does it put the agro-forest waste to good use, but it also becomes a source of revenue and saves the Global environment by producing clean and green energy. The advantages of biomass briquetting are by no means limited to its use in modern industrial plants or solid fuel boilers. Indeed, in developing countries a far bigger percentage of the population cover their energy needs with biomass alone, where their primary need is for heat energy for cooking and heating. International development cooperation has accordingly long been focused on improving the basic energy supply in many countries around the world. It is notable that biomass briquettes have played a bigger part in many projects over recent years, such as those for distributing better stove technologies, for example. Next to adapted cooking behaviors and improved cooking appliances, the fuel can play one important role in improving the overall situation of households. Biomass briquettes can be produced out of many field or process residues and burning them in cooking appliances instead of traditional fuels as logged and collected wood or charcoal can be an interesting alternative for business makers but al so for fuel clients.

2. Investor's Background

Details of all Investors in below format

Name	To be filled by the applicant
DOB	To be filled by the applicant
PAN	To be filled by the applicant
Address	To be filled by the applicant
Academic Qualification	To be filled by the applicant



Experience in business	To be filled by the applicant
Functional Responsibility in Unit	To be filled by the applicant
Name of associate concern (if any)	To be filled by the applicant
Nature of association (if any)	To be filled by the applicant
Net Worth	To be filled by the applicant

3. Company Profile

Name of the Unit	To be filled by the applicant
Constitution	To be filled by the applicant
PAN	To be filled by the applicant
Registered Office address	To be filled by the applicant
Activity	To be filled by the applicant
Loan details	To be filled by the applicant
Director	To be filled by the applicant
Unit Registration	To be filled by the applicant
Unit Location	To be filled by the applicant
Category of Project (Manufacturing/Service)	To be filled by the applicant
Zone	To be filled by the applicant
District	To be filled by the applicant
State	To be filled by the applicant

4. Details of product to be manufactured and its marketing potential

5. Details of Raw Materials with required quantity

Supplier	Raw material	Quantity	Year	Cost
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the	To be filled by the	To be filled by the	To be filled by the



Supplier	Raw material	Quantity	Year	Cost
To be filled by the applicant	applicant	applicant	applicant	applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant
	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant	To be filled by the applicant

6. Proposed location and Site Plan

Sl. No.	Particulars	Details
1	Land Area	To be filled by applicant
2	Status of Legal title & Possession	To be filled by applicant
3	if leased, Period of lease	To be filled by applicant



4	Coordinates of location	To be filled by applicant
5	Details of CLU	To be filled by applicant
6	Connectivity to roads i) State Highway (in Km.) ii) National Highway (in Km.)	To be filled by applicant
7	Availability of Water	To be filled by applicant
8	Availability of Power	To be filled by applicant

a. Electrical Power

Electricity (34 HP M/C running 300 Days with 2 Shift i.e. Effective Hr. 12 hr. Total unit consumption -91310. Present rate- Rs8.92/Unit

i. Construction Phase

KW	Quarter of the Year
To be filled by the applicant	To be filled by the applicant

ii. Steady Phase

KW	Quarter of the Year
To be filled by the applicant	To be filled by the applicant

iii. Peak Phase

KW	Quarter of the Year
To be filled by the applicant	To be filled by the applicant

b. Water Requirement

i. Construction Phase

Quantity	Quarter of the Year
In Liter	To be filled by the applicant

ii. Steady Phase

Quantity	Quarter of the Year
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In Liter	To be filled by the applicant
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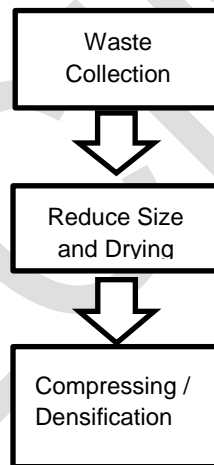
iii. Peak Phase

Quantity	Quarter of the Year
In Liter	To be filled by the applicant

- c. Transportation System
- d. Local Infrastructure
- e. Raw material procurement

7. Product Process Flow

Product development stages to be defined with details of input required at each stage of production and output generated after each stage of production for each product.



8. Cost of the Project

Particulars	Amount (Rs. In Lacs)
Land & Land Development	20.00
Plant & Machinery & Other Equipment	13.65
Preliminary & Pre-Operative Expenses	6.00
Misc. Fixed Assets	3.00



Margin Money for Working Capital	63.25
Total	105.90

a. Land details

The required area for setting up the Office Furniture manufacturing Unit is approx. 7000 Sq. Ft.
The rate for Land is- Rs.150/Sq. ft.

So, the Cost of Land- Rs. 7000x 150= Rs.10,05,000/-=Approx-10,00,000/-

Office Building with Works Shed- Rs.10,00,000/-

Total Land with Building & Works Shed- Rs.10,00,000+Rs,10,00,000 = Rs-20,00,000/-

b. Building and civil works details

Office Building with Works Shed- Rs.10,00,000/-

c. Plant and machinery details

Sl. No.	Particulars	Qty	Rate (Rs.)	Amount (Rs.)
1	Shredder	1	2,00,000	2,00,000
2	Grinder	1	2,00,000	2,00,000
3	Conveyor belt	1	2,00,000	2,00,000
4	Dryer	1	2,00,000	2,00,000
5	Binder Mixer	1	5,65,000	5,65,000
	Total			13,65,000/-

d. Pre-operative expenses details

Approx-6.00 Lacs

e. Working Capital details

I)Raw Material Requirement: - (Annual)



Sl. No.	Item	Qty	Rate (Rs.)	Total
1	Cotton stalks	696	18000	12528000.00
2	Crop husk	7200	900	6480000.00
3	Municipal waste	1800	250	450000.00
4	Wood shavings / Saw dust	14400	35	504000.00
5	Agro residues	14400	42	604800.00
GRAND TOTAL				2,05,66,800

II) Utilities (Per Annum)

Sl. No.	Item	Total (Rs.)
1	Electricity (34 HP M/C running 300 Days with 2 Shift i.e. Effective Hr. 12 hr. Total unit consumption -91310. Present rate-Rs8.92/Unit	815,000
2	Misc	1,00,000
GRAND TOTAL		9,15,000

iii) Salary & Wages (Per Annum)

Sl. No.	Designation	No.	Wages/Month (Rs.)	Total/Annum (Rs.)
1	Accountant cum Manager	1	30,000	3,60,000
2	Supervisor	2	25,000	6,00,000
3	Skilled Manpower	8	23,000	22,08,000
4	Unskilled	4	12,000	5,76,000
GRAND TOTAL				37,44,000/-

Note: Every year increment @ 5% has been considered towards financial calculation.

iv) Selling & General Administration (Annum)

Sl. No.	Designation	No.	Wages/Month (Rs.)	Total/Annum (Rs.)
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1	Manager	1	40,000	4,80,000
2	Handlers	4	15,600	7,92,000
3	Operator	2	22,000	5,28,000
GRAND TOTAL				18,00,000/-

v) Other expenditures

Sl. No.	Items	Cost (Rs.)
1	Miscellaneous	6,85,500/-
Total		6,85,500/-

WORKING CAPITAL= I+II+III= 2,05,66,800 +9,15,000 +37,44,000/-= Rs. 2,52,25,800

9. Proposed Means of Finance

Particulars	Amount (Rs. In Lacs)
Promoter's Capital	39.90
Unsecured Loans	26.00
Term Loan form Bank/ Financial Institution	40.00
Total	105.90

a. **Working Capital limit: Rs. 63.25**

10. Implementation Schedule with time chart

Activities	Starting Month	Ending Month
Arrangement of land	To be filled by applicant	To be filled by applicant
Single window clearance	To be filled by applicant	To be filled by applicant
Land development	To be filled by applicant	To be filled by applicant
Building and Civil Works	To be filled by applicant	To be filled by applicant
Order and delivery of P&M	To be filled by applicant	To be filled by applicant
Power arrangement	To be filled by applicant	To be filled by applicant



Manpower arrangement	To be filled by applicant	To be filled by applicant
Procurement of raw materials	To be filled by applicant	To be filled by applicant
Trial Operation	To be filled by applicant	To be filled by applicant
Commercial Operation	To be filled by applicant	To be filled by applicant

11. Projected Financial Analysis

a. Installed Production Capacity						
Production Capacity Per Annum						
b. SCHEDULE OF PRODUCTION AND SALES						
RAW MATERIAL MIX AND CONSUMABLES REQUIRED						
Item	Quantity	Unit	Rate	Amount		
Raw Material						
Cotton stalks	696	Kg	18000			12528000.00
Crop husk	7200	Kg	900			6480000.00
Municipal waste	1800	Kg	250			450000.00
Wood shavings / Saw dust	14400	Kg	35			504000.00
Agro residues	14400	Kg	42			604800.00
c. Cost of Raw Material Consumed/Annum						20566800.00
Parameters	1st Year	2nd Year	3rd Year	4th Year	5th Year	
Capacity Utilization	70%	75%	80%	85%	90%	
	5900	5900	5900	5900	5900	
Production (In Pcs) as per Capacity Utilized	4130	4425	4720	5015	5310	
d. BREAK UP PRODUCTION AS PER UTILIZED CAPACITY						
ITEMS	1st Year	2nd Year	3rd Year	4th Year	5th Year	



Capacity Utilization		70%	75%	80%	85%	90%
TOTAL PRODUCTION		4130	4425	4720	5015	5310
Sales Details						
Items		1st Year	2nd Year	3rd Year	4th Year	5th Year
NET Sales Price		26950000	28875000	30800000	32725000	34650000
GST RATE@12%		3234000	3234000	3696000	3927000	4158000
GROSS Sales Price		30184000	32340000	34496000	36652000	38808000
e. COST OF PRODUCTION						
Items		1st Year	2nd year	3rd Year	4th Year	5th Year
		70%	75%	80%	90%	95%
Raw Materials Consumed		15425100	15425100	16453440	17481780	18510120
Power & Fuel		640500	686250	732000	777750	823500
Direct Labor & Wages		3744000	3931200	4127760	4334148	4550855
Consumable Stores		70000	37500	40000	42500	45000
Repairs & Maintenance		40000	42000	50000	65000	70000
Other Manufacturing Exp.		17500	18750	20000	21250	22500
COST OF PRODUCTION		19937100	20140800	21423200	22722428	24021975

f. PROJECTED PROFITABILITY STATEMENT						
		1st Year	2nd year	3rd Year	4th Year	5th Year
Capacity Utilized		70%	75%	80%	90%	95%
A. Sales						
Gross Sales		30184000	32340000	34496000	36652000	38808000
Less: GST		3234000	3465000	3696000	3927000	4158000
NET SALES		26950000	28875000	30800000	32725000	34650000



B. Cost of Production						
Raw Materials Consumed		15425100	15425100	16453440	17481780	18510120
Power & Fuel		640500	686250	732000	777750	823500
Direct Labour & Wages		3744000	3931200	4127760	4334148	4550855
Consumable Stores		70000.00	37500.00	40000.00	42500.00	45000.00
Repairs & Maintenance		40000.00	42000.00	50000.00	65000.00	70000.00
Other Manufacturing Exp.		17500.00	18750.00	20000.00	21250.00	22500.00
Total Cost of Production (C)		19937100	20140800	21423200	22722428	24021975
g. Gross Profit (A-C)		10246900	12199200	13072800	13929572	14786024
Interest Expenses						
Interest Expenses (Term Loan) @7.65% /Annum for 5 yr.		408617	335134	253147	161672	59612
Interest Expenses (WC Loan) @11% /Annum		708400	708400	708400	708400	708400
Selling, General & Administrative Exp.		2485500.00	2609775.00	2740263.75	2877276.94	3021140.78
Profit before Taxation		6644383.00	8545891.00	9370989.25	10182223.06	10996871.82
Provision for Taxation		1993314.90	2563767.30	2811296.78	3054666.92	3299061.54
Profit After Taxation		4651068.10	5982123.70	6559692.48	7127556.14	7697810.27

h. DEBT SERVICE COVERAGE RATIO (COMPANY AS A WHOLE)



	1 st Year	2 nd year	3 rd Year	4 th Year	5 th Year
Profit After Tax	4651068.10	5982123.70	6559692.48	7127556.14	7697810.27
Add: - Interest Expenses (Term Loan) @7.65% /Annum for 7yrs	408617.00	335134.00	253147.00	161672.00	59612.00
Interest Expenses (WC Loan) @11% /Annum for 7 yrs	708400.00	708400.00	708400.00	708400.00	708400.00
Depreciation	259800.00	259800.00	259800.00	259800.00	259800.00
Total (A)	3274251.10	4678789.70	5338345.48	5997684.14	6669998.27
Interest Expenses (Term Loan) @7.65% /Annum for 7yrs	408617.00	335134.00	253147.00	161672.00	59612.00
Interest Expenses (WC Loan) @11% /Annum for 7 yrs	708400.00	708400.00	708400.00	708400.00	708400.00
Depreciation	259800.00	259800.00	259800.00	259800.00	259800.00
Total (A)	3274251.10	4678789.70	5338345.48	5997684.14	6669998.27
Interest Expenses (Term Loan) @7.65% /Annum for 7yrs	408617.00	335134.00	253147.00	161672.00	59612.00
Interest Expenses (WC Loan) @11% /Annum for 7 yrs.	708400.00	708400.00	708400.00	708400.00	708400.00
Term Loan Repayment	635019.00	708503.00	790490.00	881964.00	984024.00
Total Debt Payment (B)	1752036.00	1752037.00	1752037.00	1752036.00	1752036.00
DSCR (A/B)	1.87	2.67	3.05	3.42	3.81
Cash Inflow	2639232.10	3970286.70	4547855.48	5115720.14	5685974.27
i.BREAK EVEN ANALYSIS	1st year	2nd year	3rd Year	4th Year	5th Year
A. Net Sales	26950000	28875000	30800000	32725000	34650000



B. Variable Expenses						
Raw Materials Consumed		15425100	15425100	16453440	17481780	18510120
Power & Fuel		640500	686250	732000	777750	823500
Consumable Stores		70000.00	37500.00	40000.00	42500.00	45000.00
Repairs & Maintenance		40000	42000	50000	65000	70000
Other Manufacturing Exp.		17500	18750	20000	21250	22500
		16193100	16209600	17295440	18388280	19471120
C. Contribution (A-B)		10756900	12665400	13504560	14336720	15178880
D. Fixed Expenses						
Direct Labor & Wages		3744000	3931200	4127760	4334148	4550855
Selling, General & Administration		2485500.00	2609775.00	2740263.75	2877276.94	3021140.78
		6229500	6540975	6868023.75	7211424.94	7571996.18
Breakeven Sales at Operating Capacity		0.58	0.52	0.51	0.50	0.50

j. Projected Balance Sheet

	1st Year	2nd Year	3rd Year	4th Year	5th Year
Liabilities					
Capital	30527100	20140800	21423200	22722428	24021975
Revenue Reserves	30184000	32340000	34496000	36652000	38808000
Net Worth	60711100	52480800	55919200	59374428	62829975
Term Loan	1000000	1000000	1000000	1000000	
Working Capital Limit	1000000	1000000	1000000	1000000	1000000
Current Liabilities					
Creditors	8056320	8569280	9088971.2	9608790	9608790
Liability for expenses	20572119	20645603	20727590	20819064	20921124
Total	91339539	83695683	87735761.2	91802282	94359889
Assets					



Fixed Assets					
Gross block	20000000	23000000	27600000	34500000	44850000
Depreciation	259800	259800	259800	259800	259800
Net Fixed Assets	19740200	22740200	27340200	34240200	44590200
Non Current asset/investments	0	0	0	0	15000000
Current assets					
Inventory	7546000	10564400	12073600	12073600	12073600
Debtors					
Security Deposits					
Loans and Advances					
Cash & Bank Balance	4651068.1	5982123.7	6559692.48	7127556.14	7697810.27
Total	31937268.1	39286723.7	45973492.48	53441356.14	79361610.27

K. CALCULATION OF PAYBACK PERIOD

Investment	106	Lacs			
Cash In Flow	26	Lacs			
(PAT- Depreciation- Interest)					
PAY BACK PERIOD	4.08				

12. Projected Employment Details

Type of Employment	Number of Employees	Projected Cost
Skilled Manpower	12	1440000
Semi-skilled Manpower	14	3528000
Unskilled Manpower	4	576000
TOTAL		5544000

13. Requirement of Statutory clearances

Item	Status



Partnership Deed	
Lease deed registration	
PAN	
GST Registration	
UDYAM	
Trade License	
NOC form local authority	

SPECIMEN