

BARBED WIRE



1.0 INTRODUCTION

Barbed wire is useful industrial product, mainly used for fencing purposes. Barbed wire is a fencing material consisting of a metal cable with regularly spaced sharp projections. The cable usually consists of two wires twisted around each other to add strength and to allow the cable to expand and contract with temperature changes without breaking. The sharp points, called barbs, usually consist of short pieces of wire twisted around one or both of the cable wires. Barbed wire fencing prevents the unwanted entrance and intrusion of animals and persons into the fenced area. It is durable, easy to install, flexible, and inexpensive. Moreover, barbed wire is used for military and security purposes also.

This project profile is for setting up of a barbed wire making unit with production capacity of 300 MT barbed wire per annum, based on 300 working days per annum and 8 working hours per day.

2.0 MARKET POTENTIAL

Barbed wire is mainly used to safeguard houses, gardens, forests, nurseries and specified prohibited areas

pertaining to defence establishment, aerodromes, railways, warehouses and other Govt. and Private properties. They are also used to safeguard international boundaries and are one of the cheapest materials to be used for these various purposes. Looking to the specific but important use of the product, product has demand all over the country to protect the field / property from various external elements.

3.0 PROCESS DETAILS

The barbed wires are made on an automatic machine. The barbed wire is made out of 12/14 SWG MS Galvanized wires. While two main line wires are fed into the machines through its axes, another wire is fed across into the pair of line wires to form barbs at required intervals. The line wire twine themselves automatically. The point wire after forming the desired barbs strands with the line wires automatically at the desired distance thus forming the complete barbed wire. As the machine is automatic all its feeding and wire cutting mechanism is controlled by gear movements, which drive its power from the main electric motor attached to the machine. Once the machine is set up it goes on working automatically.

4.0. COST OF THE PROJECT

The estimated project cost is given below:

Particulars	(Rs. in lacs)
	Amount (Rs)
Land & Site Development	Own Land/On Lease
Building & Civil works	3.30
Plant & Machinery	6.27
Misc. Fixed assets	0.39
Preliminary & pre-operative expenses	0.71
Contingencies & escalation @ 3%	0.30
Working capital	3.39
TOTAL	14.35

4.1 Land & Site Development: Nil. Total Area: 2,000 Sq. Ft. Covered Area: 1,000 Sq. Ft.

4.2 Building & Civil Works: Details of building & civil works are given below.

Particulars	Area (Sqft)	Rate (Rs)	Amount (Rs)
Work-shed, Store Room and Office	1000	275	275000
Sub total			275000
Add: Electrification, water supply and sanitation @ 20%			55000
TOTAL			330000
Say (Rs. in lacs)			3.30

4.3 Plant & Machinery: Details of plant & machinery are given below.

Particulars	Qty	Amount (Rs)
Automatic Barbed Wire Making Machine	1	520000
Bench Grinder	1	
Universal Tensile Testing Machine	1	
Wrap Torsion Testing Machine	1	
Testing Equipment	1	
Miscellaneous Tools and Equipment	LS	50000
Sub total		570000
Add: Installation, transportation, etc @ 10%		57000
TOTAL		627000
Say (Rs. in lacs)		6.27

4.4 Misc. Fixed assets: Details of miscellaneous fixed assets are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Furniture & fixtures	LS	—	15000
Miscellaneous items	LS	—	20000
Sub total			35000
Add: Installation, transportation, etc @ 10%			3500
TOTAL			38500
Say (Rs. in lacs)			0.39

4.5 Contingencies & escalation: Contingencies & escalation has been assumed at 3% of the cost of land & site development, building & civil works, plant & machinery and miscellaneous fixed assets.**4.6 Preliminary & pre-operative expenses:** Details of preliminary & pre-operative expenses are given below.

		(Rs. In lacs)
Particulars	Amount (Rs)	
Travelling expenses	10000	
Professional & other fees	20000	
Interest during implementation	26510	
Miscellaneous expenses	14000	
TOTAL	70510	
Say (Rs. in lacs)	0.71	

4.7 Working capital: Details of working capital are given below.

(Rs. in lacs)

	Period (Days)	Total Current Assets		
		Year 1	Year 2	Year 3
Raw materials	30	3.77	4.40	5.03
Power & utility	30	0.06	0.07	0.08
Salary	30	0.28	0.28	0.28
Finished Goods	15	2.11	2.44	2.76
Receivables	15	2.26	2.63	3.01
Total		8.47	9.82	11.16
Working capital margin in Year 1 (40%)	3.39			

5.0 MEANS OF FINANCE

The means of finance for the project is estimated as below.

(Rs. in lacs)

Particulars	Percent	Amount
<u>EQUITY</u>		
A. Equity from Promoters	40%	5.74
B. Subsidy from Central/State Govt.	-	
<u>DEBT</u>		
Term Loan from Banks/Financial Institutions	60%	8.61
TOTAL	100%	14.35

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6
<u>A. INCOME</u>						
Production Capacity (Ton/ annum)	300	300	300	300	300	300
Capacity utilisation	60%	70%	80%	80%	80%	80%
Production/ annum at capacity utilisation	180	210	240	240	240	240
Total income/ annum	54.90	64.05	73.20	73.20	73.20	73.20
<u>B. OPERATING EXPENSES</u>						
Raw Materials	45.90	53.55	61.20	61.20	61.20	61.20
Power & Utility	0.76	0.88	1.01	1.01	1.01	1.01
Salary	3.36	3.38	3.39	3.41	3.43	3.44
Repair & Maintenance	0.16	0.17	0.17	0.17	0.18	0.18
Other Expenses	1.10	1.28	1.46	1.46	1.46	1.46
Total Operating Expenses	51.28	59.26	67.24	67.26	67.28	67.30
Operating profit	3.62	4.79	5.96	5.94	5.92	5.90
<u>C. FINANCIAL EXPENSES</u>						
Depreciation	0.47	0.47	0.47	0.47	0.47	0.47
Interest on Term Loan	0.69	0.63	0.49	0.35	0.21	0.07
Interest on Working Capital Loan	0.41	0.47	0.54	0.54	0.54	0.54
Net Profit	2.06	3.23	4.47	4.59	4.71	4.82
Net cash accruals	2.52	3.69	4.94	5.05	5.17	5.29
Principal Repayment	0.00	1.72	1.72	1.72	1.72	1.72

6.1 Production capacity and Sales Realisation: Total production of **Barbed Wire** at 100% capacity utilization is estimated as below.

Barbed Wire	300 Tons
Total production per annum at 100% capacity (in Ton)	300 Tons

Products	Qty	Average Rate Per Unit (Rs.)	Amount (Rs)
Barbed Wire	300 Tons	30500 Per Ton	9150000
Total Sale Turnover per annum at 100% capacity			9150000

6.2 Raw materials: Total expenses on raw materials at 100% capacity utilization are estimated as below.

Products	Qty	Average Rate Per Unit (Rs.)	Amount (Rs)
G.I.Wire 12/14 SWG	306 Ton	25000 Per Ton	7650000
Expenses on raw material at 100% capacity (Rs)			7650000

6.3 Power & Utility: Total expenses on power & utility at 100% capacity utilization is estimated as below.

Particulars	Quantity	Power (Kw)	Total (Kw)
Plant & Machinery (Total HP of 15)	--	11.19	11.19
General Lighting	10	0.10	1.00
Total power requirement/ day (Kw)			12.19
No. of hrs/day	8		
No. of days/annum	300		
Annual power requirement (kwh)	29256		
Rate per unit (Rs)	3.50		
Expenses on Power (Rs)	102396		
Expenses on other Utility (Rs)	24000		
Expenses on power & utility at 100% capacity (Rs)	126396		

6.4 Salary: Total expenses on salary in the 1st year are estimated as given below. It is assumed that salary expenses will increase @ 0.5% every subsequent year.

Particulars of Employees	Numbers	Salary/ Month (Rs)	Cost/ annum (Rs)
Manager	1	6000	72000
Technicians/machine operators	2	5000	120000
Unskilled workers	4	3000	144000
Expenses on salary in the 1st year (Rs)			336000

6.5 Repair & Maintenance: Total expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 2% every

(Rs. in lacs)

Particulars	Cost (Rs)	Rate	Amount (Rs)
Building & Civil works	3.30	1.00%	0.03
Plant & Machinery	6.27	2.00%	0.13
Misc. Fixed assets	0.39	1.50%	0.01
Expenses on repair & maintenance in year 1			0.16

6.6 Other Expenses: Other expenses have been assumed at 2% of sales realisation.

6.7 Depreciation: Depreciation has been calculated by straight line method. The details of calculation are given below.

(Rs in lacs)

Description	Cost (Rs)	Rate	Amount/ annum (Rs)
Building & Civil works	3.30	3.34%	0.11
Plant & Machinery	6.27	5.28%	0.33
Misc. Fixed assets	0.39	6.33%	0.02
TOTAL			0.47

6.8 Interest on term loan & principal repayment: Interest rate has been assumed at 8%. Duration of Loan repayment has been considered for a period of 6 years including moratorium period of 1 year with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)

Month	Year	1	2	3	4	5	6
Month 1	Opening balance	8.61	8.61	6.89	5.17	3.44	1.72
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest (8%)	0.06	0.06	0.05	0.03	0.02	0.01
	Closing balance	8.61	8.47	6.74	5.02	3.30	1.58
Month 2	Opening balance	8.61	8.47	6.74	5.02	3.30	1.58
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.06	0.04	0.03	0.02	0.01
	Closing balance	8.61	8.32	6.60	4.88	3.16	1.43
Month 3	Opening balance	8.61	8.32	6.60	4.88	3.16	1.43
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.06	0.04	0.03	0.02	0.01
	Closing balance	8.61	8.18	6.46	4.74	3.01	1.29
Month 4	Opening balance	8.61	8.18	6.46	4.74	3.01	1.29
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	8.61	8.04	6.31	4.59	2.87	1.15
Month 5	Opening balance	8.61	8.04	6.31	4.59	2.87	1.15
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	8.61	7.89	6.17	4.45	2.73	1.00
Month 6	Opening balance	8.61	7.89	6.17	4.45	2.73	1.00
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	8.61	7.75	6.03	4.30	2.58	0.86
Month 7	Opening balance	8.61	7.75	6.03	4.30	2.58	0.86

	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.03	0.02	0.01
	Closing balance	8.61	7.60	5.88	4.16	2.44	0.72
Month 8	Opening balance	8.61	7.60	5.88	4.16	2.44	0.72
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.03	0.02	0.00
	Closing balance	8.61	7.46	5.74	4.02	2.30	0.57
Month 9	Opening balance	8.61	7.46	5.74	4.02	2.30	0.57
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.03	0.02	0.00
	Closing balance	8.61	7.32	5.60	3.87	2.15	0.43
Month 10	Opening balance	8.61	7.32	5.60	3.87	2.15	0.43
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.03	0.01	0.00
	Closing balance	8.61	7.17	5.45	3.73	2.01	0.29
Month 11	Opening balance	8.61	7.17	5.45	3.73	2.01	0.29
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.02	0.01	0.00
	Closing balance	8.61	7.03	5.31	3.59	1.87	0.14
Month 12	Opening balance	8.61	7.03	5.31	3.59	1.87	0.14
	Repayment	0.00	0.14	0.14	0.14	0.14	0.14
	Interest	0.06	0.05	0.04	0.02	0.01	0.00
	Closing balance	8.61	6.89	5.17	3.44	1.72	0.00
Principal Repayment		0.00	1.72	1.72	1.72	1.72	1.72
Interest		0.69	0.63	0.49	0.35	0.21	0.07

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	6
Profit After Tax (Net Profit)	2.06	3.23	4.47	4.59	4.71	4.82
Depreciation	0.47	0.47	0.47	0.47	0.47	0.47
Interest	0.69	0.63	0.49	0.35	0.21	0.07
Total	3.21	4.32	5.42	5.40	5.38	5.36
Interest	0.69	0.63	0.49	0.35	0.21	0.07
Loan repayment	0.00	1.72	1.72	1.72	1.72	1.72
Total	0.69	2.35	2.21	2.07	1.93	1.80
DSCR	4.66	1.84	2.45	2.61	2.78	2.99

Average DSCR = 2.63

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	54.90	64.05	73.20
B. Variable cost			
Raw Materials	45.90	53.55	61.20
Power & Utility	0.76	0.88	1.01
Other expenses	1.10	1.28	1.46
Interest on Working Capital Loan	0.41	0.47	0.54
Total variable cost	48.16	56.19	64.21
C. Contribution (A B)	6.74	7.86	8.99

D. Fixed & Semi-fixed Costs			
Salary	3.36	3.38	3.39
Repair & maintenance	0.16	0.17	0.17
Interest on Term Loan	0.69	0.63	0.49
Depreciation	0.47	0.47	0.47
Total fixed cost	4.68	4.64	4.52
E. BREAK EVEN POINT	69.45%	58.95%	50.26%
F. BEP at operating capacity	41.67%	41.27%	40.21%
G. Cash BEP	37.52%	37.12%	36.07%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5	6
CASH OUTFLOW							
Capital Expenditure	10.25	0.00	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	8.47	1.34	1.34	0.00	0.00	0.00
Total (A)	10.25	8.47	1.34	1.34	0.00	0.00	0.00
CASH INFLOW							
Profit After Tax		2.06	3.23	4.47	4.59	4.71	4.82
Add: Depreciation		0.47	0.47	0.47	0.47	0.47	0.47
Add: Interest		0.69	0.63	0.49	0.35	0.21	0.07
Add: Salvage Value							
Total (B)	0.00	3.21	4.32	5.42	5.40	5.38	5.36
NET FLOW (B-A)	-10.25	-5.26	2.97	4.08	5.40	5.38	5.36

IRR = 22%

Sl. No.	Name of the Machinery Suppliers	Communication Address
1.	M/s Nasu Engineering Co.	NO-3, GIDC, Nadia Khambhat Road. Petlad, Pin - 388450, Gujarat.
2.	M/s Rajan Wire Industries	25/4, Street No. 1, Anand Parbat Industrial Area, (Near Tata Link Service Station), New Delhi, Pin - 110005
3.	M/s H P Singh & Co.	75, Ganesh Chandra Avenue, Kolkata, Pin - 700 013