



AN ISO 9001 : 2015 CERTIFIED COMPANY

Detailed project report

Sample edition

Projections from FY 2027-28

Project report

Distribution Transformers

Installed capacity 880 transformers per year

Sector Electrical products

Total project cost ₹309.17 lakh

Illustrative sample
Figures are representative

Project at a glance

Distribution Transformers
880 transformers per year

Product	Distribution Transformers	Sector	Electrical products
Installed capacity	880 transformers per year	Annual capacity	880 transformers per year
Selling price (ex-GST)	₹1,36,000 per transformer	Working days	300 a year
Manpower	26 people	Plant and machinery	₹145.79 lakh
Total project cost	₹309.17 lakh	Promoter's contribution	₹77.29 lakh (25%)
Term loan	₹231.88 lakh (75%)	Cash credit limit	₹126.16 lakh
Revenue, Year 3	₹837.76 lakh at 70%	Net profit, Year 3	₹95.52 lakh
Return on investment	30.9% a year	Break-even, Year 3	38.0% of capacity
Average DSCR	2.25	Payback period	2.9 years

This is an illustrative sample. Its figures are generated from industry-typical ratios to show the format and depth of an NPCS project report. They are not taken from any NPCS report or any real project, and should not be used for investment or lending decisions.

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1 Introduction

The product covered in this sample is distribution transformers, made in a plant sized at 880 transformers per year (880 transformers per year at full capacity). The unit is costed as a complete project, from land and building through to working capital, and its applications range from electricity boards to solar projects.

Each section follows the layout of a bank-format project report: project cost, means of finance, working capital, profitability, cash flow, balance sheet, debt service and break-even. In Year 3, running at 70% of capacity, the model unit sells ₹837.76 lakh worth of distribution transformers and keeps ₹95.52 lakh as net profit.

2 Uses and applications

Demand for the product comes mainly from the following uses:

- Electricity boards
- Industries
- Builders
- Solar projects

3 Market potential

Demand comes from state electricity distribution companies that replace failed units and extend rural and urban networks, and from factories, builders and solar plants that need their own substations. Utility orders are won through tenders that ask for BIS and BEE star certification, type test reports and vendor approval, so many new units start with private buyers and repair work. Low losses, proper drying of the active part and on-time delivery decide repeat orders.

Sales are typically made to state electricity distribution companies (DISCOMs), electrical and EPC contractors, factories and commercial buildings with their own substations, builders and housing projects, and solar and wind power projects.

A full NPCS report adds a market survey with present demand, expected growth and the names and addresses of existing manufacturers, worked out for the location you choose.

4 Manufacturing process

The plant converts raw materials into finished distribution transformers in five steps, shown in the flow chart and described below.



Process flow for distribution transformers

- 1 Core building.** CRGO sheets are cut and stacked into the core.
- 2 Winding.** LV and HV coils are wound on winding machines.
- 3 Assembly.** Core and coils are assembled with connections.
- 4 Drying and oil filling.** The assembly is dried in a vacuum oven and filled with oil in the tank.
- 5 Testing.** Each transformer is tested for losses and insulation.

5 Raw materials

The main raw materials are CRGO steel, copper or aluminium winding, transformer oil, and tank and fittings. In Year 3, at 70% utilisation, raw materials cost ₹483.07 lakh, about 57.7% of sales. The table shows how this cost splits between materials.

Raw material	Share of cost	Year 3 cost (₹ lakh)
CRGO steel	35.0%	169.08
Copper or aluminium winding	35.0%	169.07
Transformer oil	15.0%	72.46
Tank and fittings	15.0%	72.46
Total raw materials	100.0%	483.07

6 Plant and machinery

The machinery list below covers the main production equipment, costed at ₹145.79 lakh in total. Prices are indicative. A full report gives specifications and supplier names, and a bank-format DPR uses the quotations you obtain.

Machinery and equipment	Indicative cost (₹ lakh)
Core cutting machine	29.16
Winding machines	36.44
Vacuum drying oven	29.16
Oil filtration plant	21.87
Testing lab	29.16
Total plant and machinery	145.79

7 Land, building and utilities

Land and site development is taken at ₹23.78 lakh and building and civil works at ₹59.19 lakh. Other fixed assets, including electrification, furniture, testing equipment and power backup, add ₹21.59 lakh. Land rates vary widely by location, so these are the figures most likely to change in a real project.

Power and fuel cost ₹22.61 lakh in Year 3, about 2.7% of sales. Water is needed for cleaning, domestic use and, where the process calls for it, production.

8 Manpower

A team of 26 runs the plant, from management and supervision to skilled operators and helpers. The Year 1 wage bill is ₹55.98 lakh, rising 5% a year.

Category	Number	Monthly wage (₹)	Annual cost (₹ lakh)
Management, supervision and administration	4	30,500	14.64
Skilled workers and operators	9	19,500	21.06
Semi-skilled and unskilled workers	13	13,000	20.28
Total (Year 1)	26		55.98

9 Licences and approvals

A unit of this kind typically needs the following registrations and approvals. Requirements vary by state and by the exact product, so confirm them with the local authorities before applying.

- Udyam (MSME) registration
- GST registration
- Consent to establish and consent to operate from the State Pollution Control Board
- Factory licence or registration under the applicable labour law, where the workforce threshold applies
- Fire safety NOC, where required
- Trade licence from the local body
- BIS licence (ISI mark) to IS 1180 (Part 1):2014
- BEE star label registration for distribution transformers
- Type test reports for each design offered in utility tenders
- BIS-certified CRGO core steel to IS 3024

10 Project cost and means of finance

Setting up the unit costs ₹309.17 lakh in all, of which plant and machinery is ₹145.79 lakh. The estimate includes a 5% contingency on building and machinery, pre-operative expenses and the margin money needed to start working capital.

Cost of project	₹ lakh
Land and site development	23.78
Building and civil works	59.19
Plant and machinery	145.79
Other fixed assets (electrification, furniture, lab equipment, DG set)	21.59
Contingencies	10.25
Preliminary and pre-operative expenses	6.52
Margin money for working capital	42.05
Total cost of project	309.17

Means of finance

The promoter contributes ₹77.29 lakh (25% of project cost) and a term loan funds the remaining ₹231.88 lakh. Working capital is supported by a cash credit limit of ₹126.16 lakh.

Source of funds	₹ lakh
Promoter's contribution (25%)	77.29
Term loan from bank (75%)	231.88
Total means of finance	309.17
<i>Cash credit limit for working capital (separate)</i>	<i>126.16</i>

11 Working capital

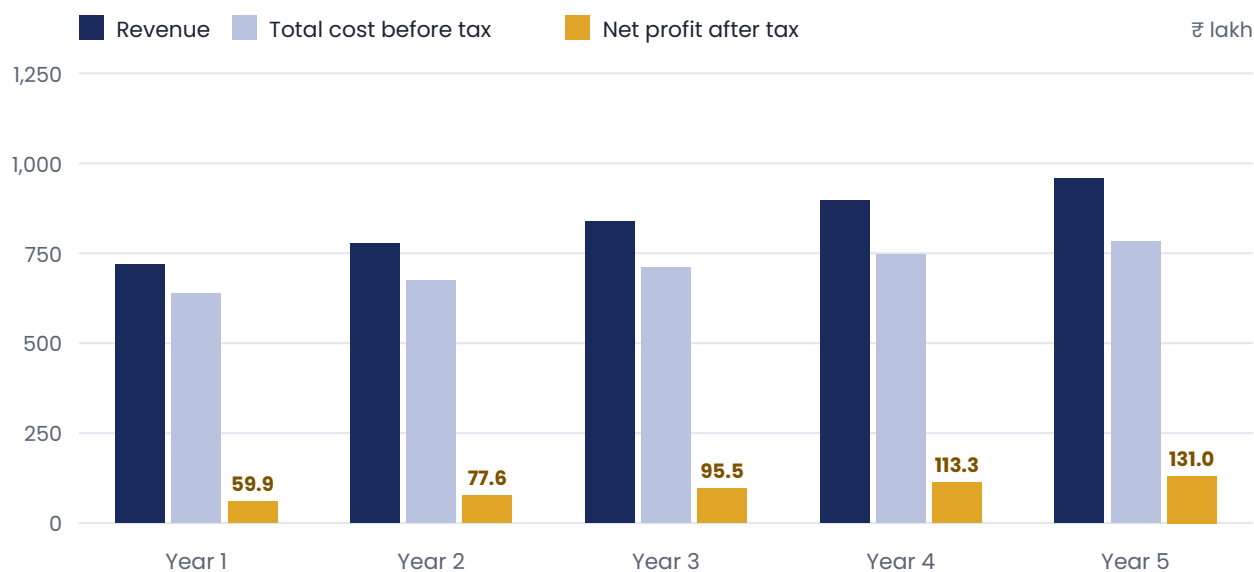
Working capital is worked out from holding periods: 45 days of raw material, 20 days of finished goods and 60 days of credit to customers, less 30 days of credit from suppliers. In Year 1 the requirement is ₹168.21 lakh. The bank funds ₹126.16 lakh through cash credit and the promoter's margin covers ₹42.05 lakh.

Particulars (₹ lakh)	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Raw material stock (45 days)	51.05	55.30	59.56	63.81	68.06
Work in progress (5 days)	6.70	7.24	7.77	8.31	8.85
Finished goods (20 days)	28.20	30.43	32.68	34.93	37.20
Trade receivables (60 days)	118.04	127.88	137.71	147.55	157.39
Total current assets	203.99	220.85	237.72	254.60	271.50
Less: trade creditors (30 days)	35.78	38.76	41.75	44.73	47.71
Working capital requirement	168.21	182.09	195.97	209.87	223.79

12 Projected profitability

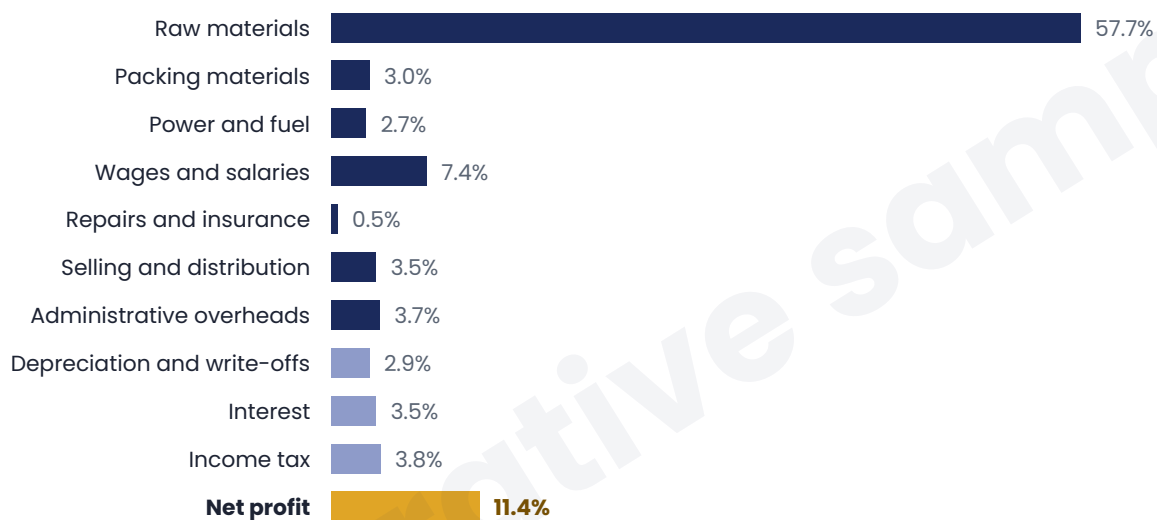
Revenue grows from ₹718.08 lakh in Year 1, at 60% utilisation, to ₹957.44 lakh in Year 5 at 80%. Net profit rises from ₹59.86 lakh to ₹131.02 lakh over the same period, an average net margin of 11.2%.

Particulars (₹ lakh)	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Capacity utilisation (%)	60%	65%	70%	75%	80%
Revenue from operations	718.08	777.92	837.76	897.60	957.44
Raw materials consumed	414.06	448.56	483.07	517.57	552.08
Packing materials	21.30	23.07	24.85	26.62	28.40
Power and fuel	19.38	21.00	22.61	24.23	25.84
Wages and salaries	55.98	58.78	61.72	64.80	68.04
Repairs and maintenance	2.92	3.06	3.21	3.38	3.54
Insurance	0.95	0.95	0.95	0.95	0.95
Cost of production	514.59	555.42	596.41	637.55	678.85
Gross profit	203.49	222.50	241.35	260.05	278.59
Selling and distribution expenses	24.80	26.87	28.94	31.00	33.07
Administrative overheads	28.46	29.88	31.38	32.95	34.59
Operating profit (EBITDA)	150.23	165.75	181.03	196.10	210.93
Depreciation	31.34	27.05	23.37	20.20	17.49
Preliminary expenses written off	1.30	1.30	1.30	1.30	1.32
Interest on term loan	23.90	20.06	15.12	9.63	3.54
Interest on cash credit	13.88	13.88	13.88	13.88	13.88
Profit before tax	79.81	103.46	127.36	151.09	174.70
Income tax	19.95	25.86	31.84	37.77	43.68
Profit after tax	59.86	77.60	95.52	113.32	131.02



Revenue, total cost before tax and net profit after tax, ₹ lakh

Where each rupee of sales goes in Year 3



Each cost head as a percentage of Year 3 sales

13 Cash flow statement

Cash generated from profit and depreciation covers the term loan repayments in every year. The closing cash balance builds up to ₹315.83 lakh by the end of Year 5.

Particulars (₹ lakh)	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Sources of funds					
Promoter's contribution	77.29	–	–	–	–
Term loan from bank	231.88	–	–	–	–
Cash credit (working capital) from bank	126.16	–	–	–	–
Net profit after tax	59.86	77.60	95.52	113.32	131.02
Depreciation	31.34	27.05	23.37	20.20	17.49
Preliminary expenses written off	1.30	1.30	1.30	1.30	1.32
Increase in trade creditors	35.78	2.98	2.99	2.98	2.98
Total sources	563.61	108.93	123.18	137.80	152.81
Application of funds					
Fixed assets	260.60	–	–	–	–
Preliminary and pre-operative expenses	6.52	–	–	–	–
Increase in inventories	85.95	7.02	7.04	7.04	7.06
Increase in trade receivables	118.04	9.84	9.83	9.84	9.84
Repayment of term loan	20.71	44.83	49.76	55.25	61.33
Drawings	–	–	–	–	–
Total application	491.82	61.69	66.63	72.13	78.23
Net cash flow	71.79	47.24	56.55	65.67	74.58
Opening cash balance	–	71.79	119.03	175.58	241.25
Closing cash balance	71.79	119.03	175.58	241.25	315.83

14 Projected balance sheet

Over the projection, retained profits build the promoter's net worth from ₹131.93 lakh to ₹554.61 lakh, and the term loan reduces from ₹211.17 lakh to nil as it is repaid.

As at year end (₹ lakh)	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Liabilities					
Promoter's capital	77.29	77.29	77.29	77.29	77.29
Reserves and surplus	59.86	137.46	232.98	346.30	477.32
Term loan	211.17	166.34	116.58	61.33	–
Cash credit from bank	126.16	126.16	126.16	126.16	126.16
Trade creditors	35.78	38.76	41.75	44.73	47.71
Total liabilities	510.26	546.01	594.76	655.81	728.48
Assets					
Gross fixed assets	260.60	260.60	260.60	260.60	260.60
Less: accumulated depreciation	(31.34)	(58.39)	(81.76)	(101.96)	(119.45)
Net fixed assets	229.26	202.21	178.84	158.64	141.15
Preliminary expenses not written off	5.22	3.92	2.62	1.32	–
Inventories	85.95	92.97	100.01	107.05	114.11
Trade receivables	118.04	127.88	137.71	147.55	157.39
Cash and bank balance	71.79	119.03	175.58	241.25	315.83
Total assets	510.26	546.01	594.76	655.81	728.48

15 Depreciation

Depreciation is charged on the written-down value method at Income Tax Act rates: 10% on building, 15% on plant and machinery and 10% on other fixed assets. Land is not depreciated, and preliminary expenses are written off over five years.

Particulars (₹ lakh)	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Building and civil works (cost ₹62.15 lakh, 10% WDV)					
Opening written-down value	62.15	55.93	50.34	45.31	40.78
Depreciation	6.22	5.59	5.03	4.53	4.08
Closing written-down value	55.93	50.34	45.31	40.78	36.70
Plant and machinery (cost ₹153.08 lakh, 15% WDV)					
Opening written-down value	153.08	130.12	110.60	94.01	79.91
Depreciation	22.96	19.52	16.59	14.10	11.99
Closing written-down value	130.12	110.60	94.01	79.91	67.92
Other fixed assets (cost ₹21.59 lakh, 10% WDV)					
Opening written-down value	21.59	19.43	17.49	15.74	14.17
Depreciation	2.16	1.94	1.75	1.57	1.42
Closing written-down value	19.43	17.49	15.74	14.17	12.75
Total depreciation	31.34	27.05	23.37	20.20	17.49
Preliminary expenses written off	1.30	1.30	1.30	1.30	1.32

16 Term loan repayment

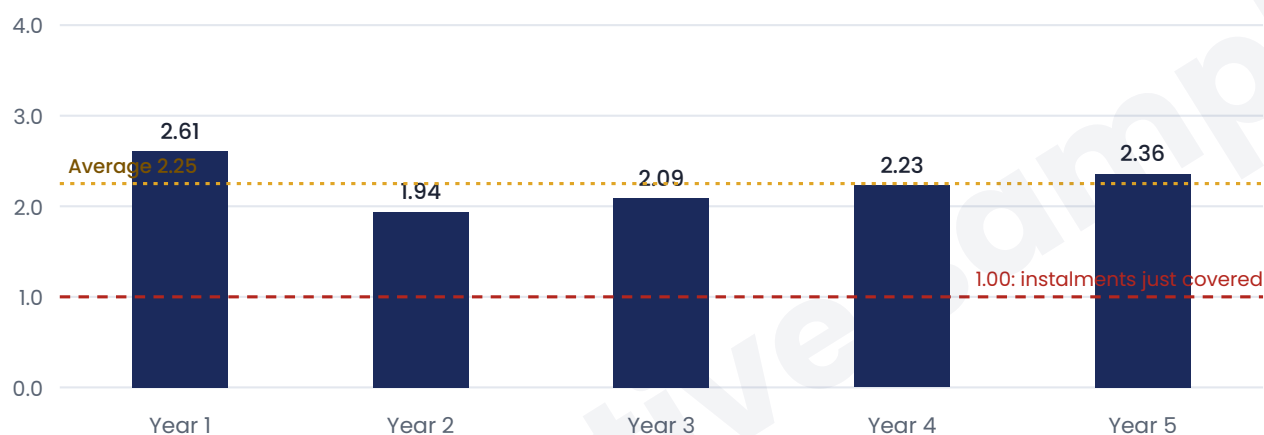
Repayment of the ₹231.88 lakh term loan starts after a moratorium of 6 months, during which interest at 10.5% is serviced. The loan is then cleared in 54 EMIs of ₹5,40,656 each, and the annexure gives the monthly schedule.

Particulars (₹ lakh)	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Opening balance	231.88	211.17	166.34	116.58	61.33
Interest	23.90	20.06	15.12	9.63	3.54
Principal repaid	20.71	44.83	49.76	55.25	61.33
Closing balance	211.17	166.34	116.58	61.33	—

17 Debt service coverage

Cash available for debt service covers the term loan instalments 2.25 times on average, and never less than 1.94 times (Year 2).

Particulars (₹ lakh)	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Net profit after tax	59.86	77.60	95.52	113.32	131.02
Depreciation and write-offs	32.64	28.35	24.67	21.50	18.81
Interest on term loan	23.90	20.06	15.12	9.63	3.54
Total available for debt service (A)	116.40	126.01	135.31	144.45	153.37
Principal repayment	20.71	44.83	49.76	55.25	61.33
Interest on term loan	23.90	20.06	15.12	9.63	3.54
Total debt service (B)	44.61	64.89	64.88	64.88	64.87
DSCR (A / B)	2.61	1.94	2.09	2.23	2.36

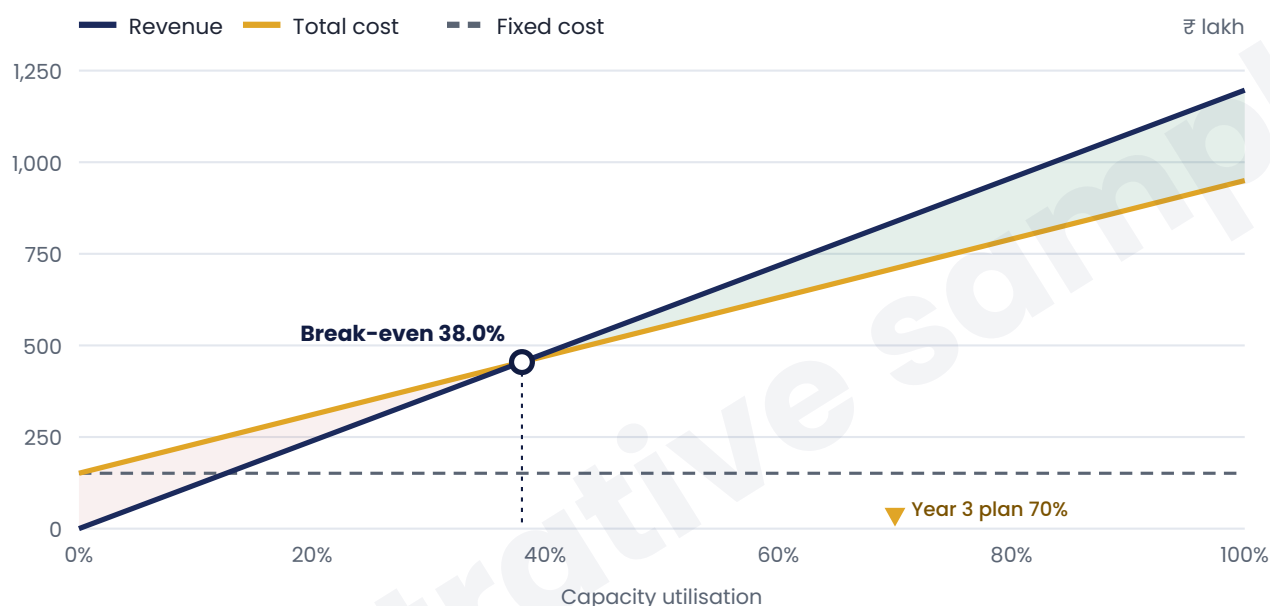


DSCR by year. A ratio above 1.00 means cash accruals cover the term loan instalments.

18 Break-even analysis

At Year 3 levels the unit breaks even at 38% of installed capacity, against planned utilisation of 70%. On a cash basis, leaving out depreciation and write-offs, break-even falls to 31.8%.

Particulars (₹ lakh)	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Revenue from operations	718.08	777.92	837.76	897.60	957.44
Variable costs	479.54	519.50	559.47	599.42	639.39
Contribution	238.54	258.42	278.29	298.18	318.05
Fixed costs (incl. depreciation and interest)	158.73	154.96	150.93	147.09	143.35
Break-even as % of installed capacity	39.9	39.0	38.0	37.0	36.1
Cash break-even as % of installed capacity	31.7	31.8	31.8	31.6	31.3
Break-even sales	477.83	466.48	454.36	442.78	431.53



Break-even chart at Year 3 prices and costs, scaled to full capacity. Shaded areas show the loss zone (left) and profit zone (right).

19 Financial ratios

Liquidity and leverage improve over the projection. The current ratio stays at or above 1.70, while debt-equity drops from 1.60 to zero as the term loan is repaid.

Ratio	Year 1 FY 2027-28	Year 2 FY 2028-29	Year 3 FY 2029-30	Year 4 FY 2030-31	Year 5 FY 2031-32
Current ratio	1.70	2.06	2.46	2.90	3.38
Quick ratio	1.17	1.50	1.87	2.28	2.72
Debt-equity ratio (term loan / net worth)	1.60	0.79	0.38	0.15	0.00
Total outside liabilities / net worth	2.83	1.57	0.92	0.55	0.31
Interest coverage ratio	3.11	4.05	5.39	7.43	11.03
DSCR	2.61	1.94	2.09	2.23	2.36
Gross profit margin (%)	28.3	28.6	28.8	29.0	29.1
Operating profit (EBITDA) margin (%)	20.9	21.3	21.6	21.8	22.0
Net profit margin (%)	8.3	10.0	11.4	12.6	13.7
Return on capital employed (%)	25.1	27.3	28.4	28.6	28.2
Break-even (% of installed capacity)	39.9	39.0	38.0	37.0	36.1

20 Key assumptions

- Commercial production starts in April 2027, and all assets are in use from the first year.
- Capacity utilisation of 60% in Year 1, rising to 80% by Year 5, over 300 working days a year.
- Selling price of ₹1,36,000 per transformer, excluding GST, held constant through the projection.
- Raw materials at 57.7% of sales, packing materials at 3%, power and fuel at 2.7%, and selling and distribution at 3.5%.
- Wages and salaries rise by 5% a year; repairs and administrative overheads rise by 5% a year.
- Working capital based on 45 days of raw material, 5 days of work in progress, 20 days of finished goods and 60 days of receivables, less 30 days of creditors.
- Term loan at 10.5% interest with a 6-month moratorium and 54 monthly instalments; cash credit at 11% on 75% of the working capital requirement.
- Depreciation on the written-down value method at Income Tax Act rates; income tax at a flat 25% of profit for simplicity.
- Contingency of 5% on building and machinery; preliminary and pre-operative expenses written off over five years.
- All amounts in ₹ lakh unless stated otherwise, excluding GST.

21 Conclusion

The model shows that a distribution transformers unit sized at 880 transformers per year can be financed 75:25 by a bank and its promoter, service its loan with an average DSCR of 2.25, and return about 30.9% a year on a project cost of ₹309.17 lakh. These are sample figures. A real project needs a report built on its own site, quotations and market.

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Website
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A Annexure: monthly loan repayment schedule

Term loan of ₹231.88 lakh at 10.5% a year. Amounts in ₹ lakh.

No.	Month	Opening balance	Interest	Principal	Instalment	Closing balance
1	Apr 2027	231.88	2.03	–	2.03	231.88
2	May 2027	231.88	2.03	–	2.03	231.88
3	Jun 2027	231.88	2.03	–	2.03	231.88
4	Jul 2027	231.88	2.03	–	2.03	231.88
5	Aug 2027	231.88	2.03	–	2.03	231.88
6	Sep 2027	231.88	2.03	–	2.03	231.88
7	Oct 2027	231.88	2.03	3.38	5.41	228.50
8	Nov 2027	228.50	2.00	3.41	5.41	225.10
9	Dec 2027	225.10	1.97	3.44	5.41	221.66
10	Jan 2028	221.66	1.94	3.47	5.41	218.19
11	Feb 2028	218.19	1.91	3.50	5.41	214.69
12	Mar 2028	214.69	1.88	3.53	5.41	211.17
13	Apr 2028	211.17	1.85	3.56	5.41	207.61
14	May 2028	207.61	1.82	3.59	5.41	204.02
15	Jun 2028	204.02	1.79	3.62	5.41	200.40
16	Jul 2028	200.40	1.75	3.65	5.41	196.74
17	Aug 2028	196.74	1.72	3.69	5.41	193.06
18	Sep 2028	193.06	1.69	3.72	5.41	189.34
19	Oct 2028	189.34	1.66	3.75	5.41	185.59
20	Nov 2028	185.59	1.62	3.78	5.41	181.81
21	Dec 2028	181.81	1.59	3.82	5.41	177.99
22	Jan 2029	177.99	1.56	3.85	5.41	174.14
23	Feb 2029	174.14	1.52	3.88	5.41	170.26
24	Mar 2029	170.26	1.49	3.92	5.41	166.34
25	Apr 2029	166.34	1.46	3.95	5.41	162.39
26	May 2029	162.39	1.42	3.99	5.41	158.41
27	Jun 2029	158.41	1.39	4.02	5.41	154.39
28	Jul 2029	154.39	1.35	4.06	5.41	150.33
29	Aug 2029	150.33	1.32	4.09	5.41	146.24
30	Sep 2029	146.24	1.28	4.13	5.41	142.11
31	Oct 2029	142.11	1.24	4.16	5.41	137.95
32	Nov 2029	137.95	1.21	4.20	5.41	133.75
33	Dec 2029	133.75	1.17	4.24	5.41	129.51
34	Jan 2030	129.51	1.13	4.27	5.41	125.24
35	Feb 2030	125.24	1.10	4.31	5.41	120.93
36	Mar 2030	120.93	1.06	4.35	5.41	116.58
37	Apr 2030	116.58	1.02	4.39	5.41	112.19
38	May 2030	112.19	0.98	4.42	5.41	107.77
39	Jun 2030	107.77	0.94	4.46	5.41	103.31

No.	Month	Opening balance	Interest	Principal	Instalment	Closing balance
40	Jul 2030	103.31	0.90	4.50	5.41	98.80
41	Aug 2030	98.80	0.86	4.54	5.41	94.26
42	Sep 2030	94.26	0.82	4.58	5.41	89.68
43	Oct 2030	89.68	0.78	4.62	5.41	85.06
44	Nov 2030	85.06	0.74	4.66	5.41	80.40
45	Dec 2030	80.40	0.70	4.70	5.41	75.69
46	Jan 2031	75.69	0.66	4.74	5.41	70.95
47	Feb 2031	70.95	0.62	4.79	5.41	66.16
48	Mar 2031	66.16	0.58	4.83	5.41	61.33
49	Apr 2031	61.33	0.54	4.87	5.41	56.46
50	May 2031	56.46	0.49	4.91	5.41	51.55
51	Jun 2031	51.55	0.45	4.96	5.41	46.60
52	Jul 2031	46.60	0.41	5.00	5.41	41.60
53	Aug 2031	41.60	0.36	5.04	5.41	36.56
54	Sep 2031	36.56	0.32	5.09	5.41	31.47
55	Oct 2031	31.47	0.28	5.13	5.41	26.34
56	Nov 2031	26.34	0.23	5.18	5.41	21.16
57	Dec 2031	21.16	0.19	5.22	5.41	15.94
58	Jan 2032	15.94	0.14	5.27	5.41	10.67
59	Feb 2032	10.67	0.09	5.31	5.41	5.36
60	Mar 2032	5.36	0.05	5.36	5.41	–