



AN ISO 9001 : 2015 CERTIFIED COMPANY

Detailed project report

Sample edition

Projections from FY 2027-28

Project report

Precipitated Silica from Rice Husk Ash

Installed capacity 5.2 MT per day

Sector Specialty chemicals

Total project cost ₹396.28 lakh

Illustrative sample
Figures are representative

Project at a glance

Precipitated Silica from Rice Husk Ash
5.2 MT per day

Product	Precipitated Silica from Rice Husk Ash	Sector	Specialty chemicals
Installed capacity	5.2 MT per day	Annual capacity	1,716 MT per year
Selling price (ex-GST)	₹47,300 per MT	Working days	330 a year
Manpower	18 people	Plant and machinery	₹194.12 lakh
Total project cost	₹396.28 lakh	Promoter's contribution	₹99.07 lakh (25%)
Term loan	₹297.21 lakh (75%)	Cash credit limit	₹55.10 lakh
Revenue, Year 3	₹568.17 lakh at 70%	Net profit, Year 3	₹90.83 lakh
Return on investment	22.9% a year	Break-even, Year 3	36.3% of capacity
Average DSCR	1.88	Payback period	3.4 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 project modelled here is a unit producing precipitated silica from rice husk ash in the specialty chemicals sector, sized at 5.2 MT per day. Working 330 days a year, the plant can turn out 1,716 MT per year at full capacity. The product's applications range from tyre makers to paints.

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 ₹568.17 lakh worth of precipitated silica from rice husk ash and keeps ₹90.83 lakh as net profit.

2 Uses and applications

The main applications and markets for the product are:

- Tyre makers
- Rubber goods
- Toothpaste makers
- Paints

3 Market potential

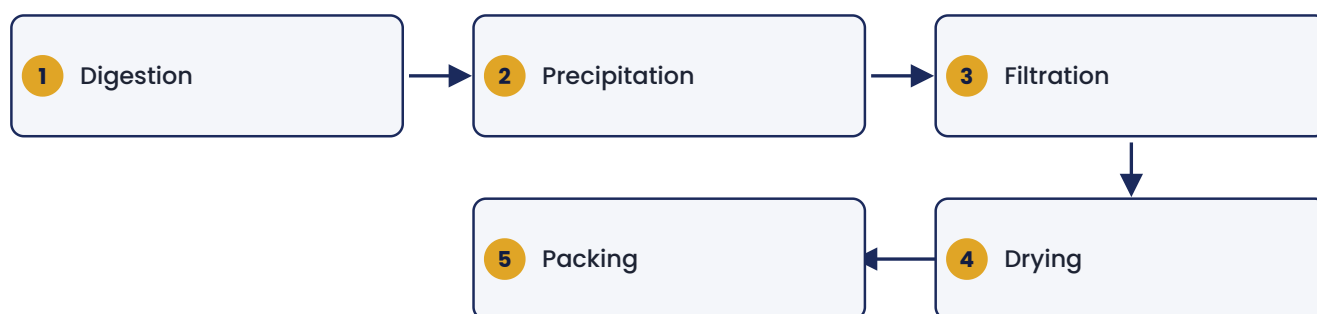
Demand comes mainly from tyre and rubber goods makers who want a lower carbon reinforcing silica, with steady volumes also going into toothpaste, paints and anti-caking uses. A rice husk ash silica plant competes on two things: a secure, low-cost supply of ash from nearby rice mills and husk-fired boilers, and consistent surface area and purity from batch to batch.

Typical buyers include tyre manufacturers, rubber footwear and moulded rubber goods makers, toothpaste and oral care makers, paint and coating makers, and feed premix and agrochemical formulators.

Because demand and competition vary from one district to the next, the market section of a full report is prepared for the promoter's chosen location, with a list of existing manufacturers.

4 Manufacturing process

The plant converts raw materials into finished precipitated silica from rice husk ash in five steps, shown in the flow chart and described below.



Process flow for precipitated silica from rice husk ash

- 1 Digestion.** Rice husk ash is digested with caustic soda to make sodium silicate.
- 2 Precipitation.** Silica is precipitated by adding acid under control.
- 3 Filtration.** Silica is filtered and washed in a filter press.
- 4 Drying.** Wet cake is spray dried.
- 5 Packing.** Silica is packed in bags.

5 Raw materials

Raw materials account for 44.2% of sales at Year 3 volumes, a total of ₹251.27 lakh, with rice husk ash the biggest item in the mix.

Raw material	Share of cost	Year 3 cost (₹ lakh)
Rice husk ash	40.0%	100.51
Caustic soda	35.0%	87.94
Sulphuric acid	25.0%	62.82
Total raw materials	100.0%	251.27

6 Plant and machinery

Plant and machinery accounts for ₹194.12 lakh of the project cost. The reactors takes the largest share, and the other items and their indicative costs are listed below.

Machinery and equipment	Indicative cost (₹ lakh)
Digester	38.83
Reactors	48.53
Filter press	38.82
Spray dryer	48.53
Packing	19.41
Total plant and machinery	194.12

7 Land, building and utilities

Land and site development is taken at ₹36.32 lakh and building and civil works at ₹92.63 lakh. Other fixed assets, including electrification, furniture, testing equipment and power backup, add ₹31.29 lakh. Land rates vary widely by location, so these are the figures most likely to change in a real project.

Utilities in Year 3 cost ₹29.34 lakh for power and fuel, or 5.2% of sales. The plant also needs a reliable water supply for cleaning and domestic use, and for the process where required.

8 Manpower

Staffing for the model unit is 18 people, at a Year 1 cost of ₹41.04 lakh. Wages are escalated by 5% each year in the projections.

Category	Number	Monthly wage (₹)	Annual cost (₹ lakh)
Management, supervision and administration	3	32,500	11.70
Skilled workers and operators	6	20,500	14.76
Semi-skilled and unskilled workers	9	13,500	14.58
Total (Year 1)	18		41.04

9 Licences and approvals

The main registrations and approvals for a unit like this are listed below. They differ from state to state, so check the current requirements with the relevant departments.

- 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
- IS 12076:2026 Precipitated silica for rubber industry (BIS), the usual quality reference for rubber grade

10 Project cost and means of finance

Setting up the unit costs ₹396.28 lakh in all, of which plant and machinery is ₹194.12 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	36.32
Building and civil works	92.63
Plant and machinery	194.12
Other fixed assets (electrification, furniture, lab equipment, DG set)	31.29
Contingencies	14.34
Preliminary and pre-operative expenses	9.22
Margin money for working capital	18.36
Total cost of project	396.28

Means of finance

The promoter contributes ₹99.07 lakh (25% of project cost) and a term loan funds the remaining ₹297.21 lakh. Working capital is supported by a cash credit limit of ₹55.10 lakh.

Source of funds	₹ lakh
Promoter's contribution (25%)	99.07
Term loan from bank (75%)	297.21
Total means of finance	396.28
<i>Cash credit limit for working capital (separate)</i>	<i>55.10</i>

11 Working capital

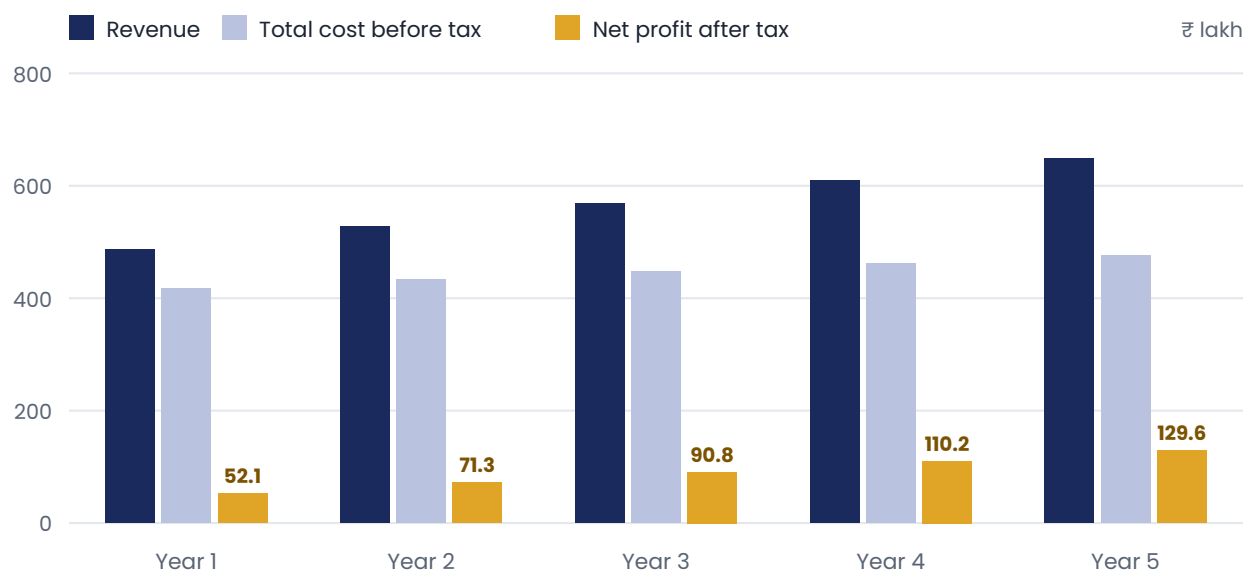
The unit needs ₹73.46 lakh of working capital in Year 1, based on 30 days of raw material stock, 15 days of finished goods and 45 days of customer credit, net of 30 days of supplier credit. Of this, ₹55.10 lakh comes from the bank and ₹18.36 lakh from the promoter.

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 (30 days)	17.70	19.18	20.65	22.13	23.60
Work in progress (3 days)	2.31	2.50	2.68	2.86	3.05
Finished goods (15 days)	12.45	13.43	14.40	15.38	16.37
Trade receivables (45 days)	60.04	65.04	70.05	75.05	80.05
Total current assets	92.50	100.15	107.78	115.42	123.07
Less: trade creditors (30 days)	19.04	20.63	22.21	23.80	25.39
Working capital requirement	73.46	79.52	85.57	91.62	97.68

12 Projected profitability

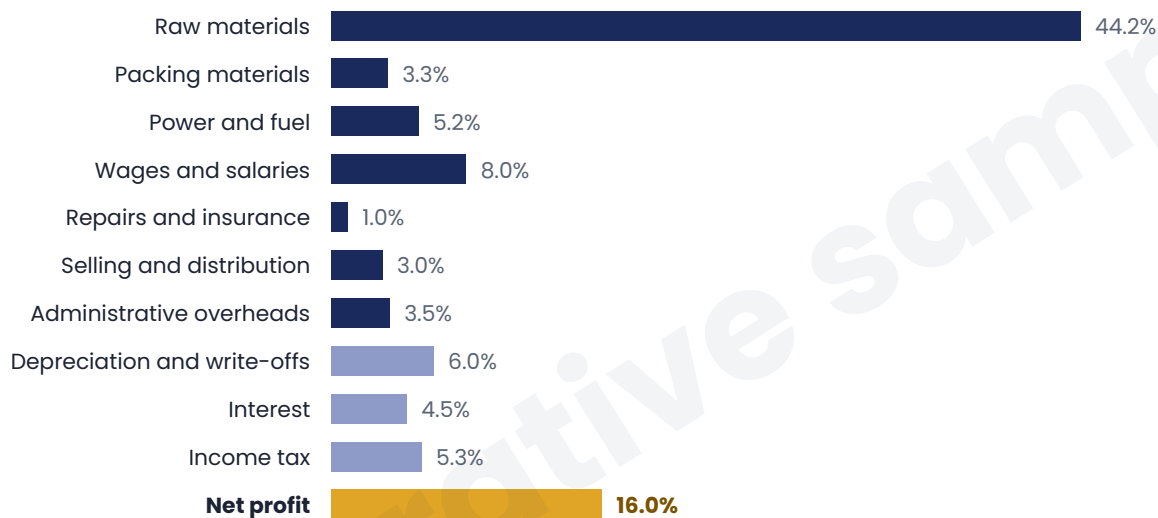
The unit is profitable from the first year, with a net profit of ₹52.08 lakh on sales of ₹487.00 lakh. By Year 5 sales reach ₹649.33 lakh and net profit ₹129.64 lakh, giving an average net margin of 15.7% across the projection.

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	487.00	527.58	568.17	608.75	649.33
Raw materials consumed	215.38	233.32	251.27	269.22	287.17
Packing materials	16.27	17.62	18.98	20.33	21.69
Power and fuel	25.15	27.24	29.34	31.44	33.53
Wages and salaries	41.04	43.09	45.25	47.51	49.88
Repairs and maintenance	3.88	4.08	4.28	4.49	4.72
Insurance	1.33	1.33	1.33	1.33	1.33
Cost of production	303.05	326.68	350.45	374.32	398.32
Gross profit	183.95	200.90	217.72	234.43	251.01
Selling and distribution expenses	14.70	15.93	17.15	18.38	19.60
Administrative overheads	17.85	18.74	19.68	20.66	21.70
Operating profit (EBITDA)	151.40	166.23	180.89	195.39	209.71
Depreciation	43.43	37.56	32.50	28.15	24.39
Preliminary expenses written off	1.84	1.84	1.84	1.84	1.86
Interest on term loan	30.63	25.71	19.38	12.35	4.54
Interest on cash credit	6.06	6.06	6.06	6.06	6.06
Profit before tax	69.44	95.06	121.11	146.99	172.86
Income tax	17.36	23.76	30.28	36.75	43.22
Profit after tax	52.08	71.30	90.83	110.24	129.64



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 ₹307.91 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	99.07	–	–	–	–
Term loan from bank	297.21	–	–	–	–
Cash credit (working capital) from bank	55.10	–	–	–	–
Net profit after tax	52.08	71.30	90.83	110.24	129.64
Depreciation	43.43	37.56	32.50	28.15	24.39
Preliminary expenses written off	1.84	1.84	1.84	1.84	1.86
Increase in trade creditors	19.04	1.59	1.58	1.59	1.59
Total sources	567.77	112.29	126.75	141.82	157.48
Application of funds					
Fixed assets	368.70	–	–	–	–
Preliminary and pre-operative expenses	9.22	–	–	–	–
Increase in inventories	32.46	2.65	2.62	2.64	2.65
Increase in trade receivables	60.04	5.00	5.01	5.00	5.00
Repayment of term loan	26.55	57.45	63.78	70.81	78.62
Drawings	–	–	–	–	–
Total application	496.97	65.10	71.41	78.45	86.27
Net cash flow	70.80	47.19	55.34	63.37	71.21
Opening cash balance	–	70.80	117.99	173.33	236.70
Closing cash balance	70.80	117.99	173.33	236.70	307.91

14 Projected balance sheet

The projected balance sheet balances in every year. Net worth grows from ₹143.77 lakh at the end of Year 1 to ₹553.16 lakh at the end of Year 5, while the term loan outstanding falls from ₹270.66 lakh to nil.

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	99.07	99.07	99.07	99.07	99.07
Reserves and surplus	52.08	123.38	214.21	324.45	454.09
Term loan	270.66	213.21	149.43	78.62	–
Cash credit from bank	55.10	55.10	55.10	55.10	55.10
Trade creditors	19.04	20.63	22.21	23.80	25.39
Total liabilities	495.95	511.39	540.02	581.04	633.65
Assets					
Gross fixed assets	368.70	368.70	368.70	368.70	368.70
Less: accumulated depreciation	(43.43)	(80.99)	(113.49)	(141.64)	(166.03)
Net fixed assets	325.27	287.71	255.21	227.06	202.67
Preliminary expenses not written off	7.38	5.54	3.70	1.86	–
Inventories	32.46	35.11	37.73	40.37	43.02
Trade receivables	60.04	65.04	70.05	75.05	80.05
Cash and bank balance	70.80	117.99	173.33	236.70	307.91
Total assets	495.95	511.39	540.02	581.04	633.65

15 Depreciation

Fixed assets are depreciated on the written-down value method, at 15% a year for plant and machinery, 10% for building and 10% for other assets. Land carries no depreciation.

Preliminary and pre-operative expenses are written off in equal parts 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 ₹97.26 lakh, 10% WDV)					
Opening written-down value	97.26	87.53	78.78	70.90	63.81
Depreciation	9.73	8.75	7.88	7.09	6.38
Closing written-down value	87.53	78.78	70.90	63.81	57.43
Plant and machinery (cost ₹203.83 lakh, 15% WDV)					
Opening written-down value	203.83	173.26	147.27	125.18	106.40
Depreciation	30.57	25.99	22.09	18.78	15.96
Closing written-down value	173.26	147.27	125.18	106.40	90.44
Other fixed assets (cost ₹31.29 lakh, 10% WDV)					
Opening written-down value	31.29	28.16	25.34	22.81	20.53
Depreciation	3.13	2.82	2.53	2.28	2.05
Closing written-down value	28.16	25.34	22.81	20.53	18.48
Total depreciation	43.43	37.56	32.50	28.15	24.39
Preliminary expenses written off	1.84	1.84	1.84	1.84	1.86

16 Term loan repayment

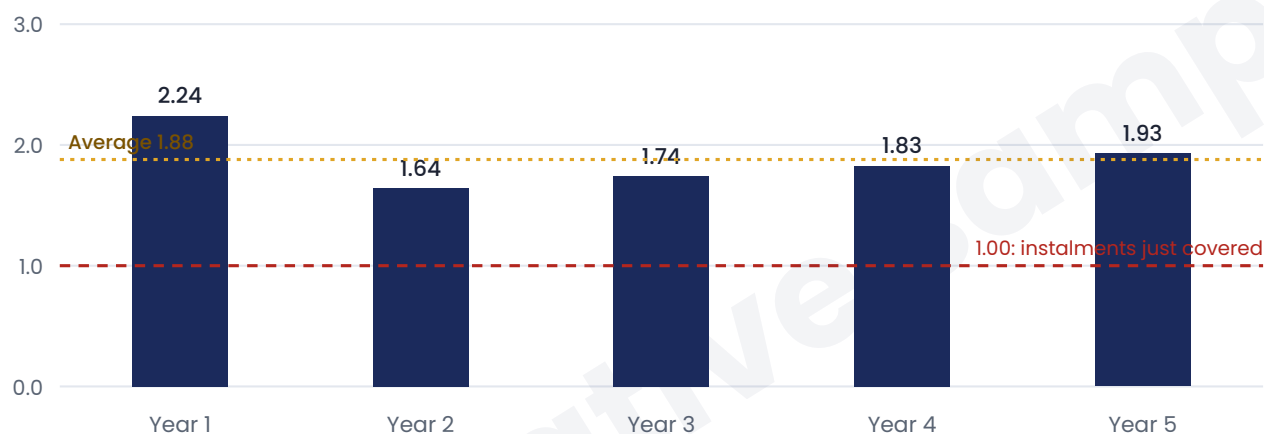
Repayment of the ₹297.21 lakh term loan starts after a moratorium of 6 months, during which interest at 10.5% is serviced. The loan is then cleared in 54 EMIs of ₹6,92,981 each, and the annexure gives the monthly schedule.

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	297.21	270.66	213.21	149.43	78.62
Interest	30.63	25.71	19.38	12.35	4.54
Principal repaid	26.55	57.45	63.78	70.81	78.62
Closing balance	270.66	213.21	149.43	78.62	—

17 Debt service coverage

The debt service coverage ratio averages 1.88 over the repayment years, with a low of 1.64 in Year 2. A DSCR above 1 means the unit earns enough to meet its loan instalments, and the model keeps a margin above that in every year.

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	52.08	71.30	90.83	110.24	129.64
Depreciation and write-offs	45.27	39.40	34.34	29.99	26.25
Interest on term loan	30.63	25.71	19.38	12.35	4.54
Total available for debt service (A)	127.98	136.41	144.55	152.58	160.43
Principal repayment	26.55	57.45	63.78	70.81	78.62
Interest on term loan	30.63	25.71	19.38	12.35	4.54
Total debt service (B)	57.18	83.16	83.16	83.16	83.16
DSCR (A / B)	2.24	1.64	1.74	1.83	1.93

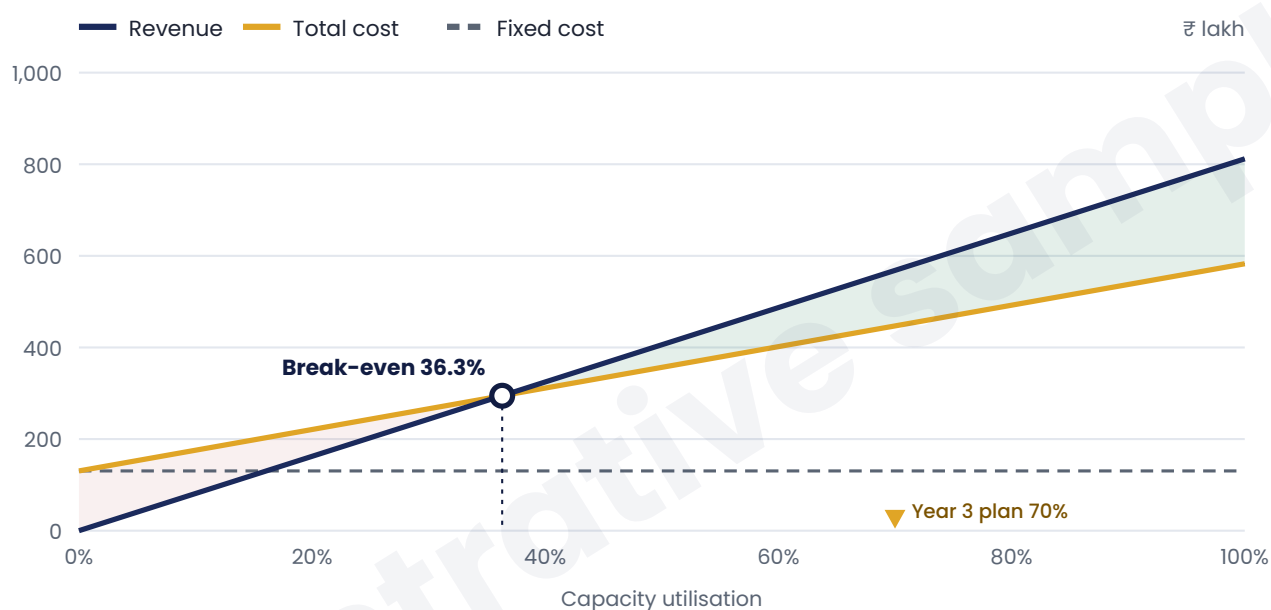


DSCR by year. A ratio above 1.00 means cash accruals cover the term loan instalments.

18 Break-even analysis

The unit needs to run at 36.3% of capacity to break even in Year 3, well below the 70% assumed for that year. Cash break-even, which excludes depreciation and write-offs, is 26.7%.

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	487.00	527.58	568.17	608.75	649.33
Variable costs	271.50	294.11	316.74	339.37	361.99
Contribution	215.50	233.47	251.43	269.38	287.34
Fixed costs (incl. depreciation and interest)	146.06	138.41	130.32	122.39	114.48
Break-even as % of installed capacity	40.7	38.5	36.3	34.1	31.9
Cash break-even as % of installed capacity	28.1	27.6	26.7	25.7	24.6
Break-even sales	330.08	312.77	294.49	276.58	258.70



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 2.20, while debt-equity drops from 1.88 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	2.20	2.88	3.64	4.46	5.35
Quick ratio	1.76	2.42	3.15	3.95	4.82
Debt-equity ratio (term loan / net worth)	1.88	0.98	0.48	0.19	0.00
Total outside liabilities / net worth	2.40	1.33	0.73	0.37	0.15
Interest coverage ratio	2.89	3.99	5.76	8.98	17.31
DSCR	2.24	1.64	1.74	1.83	1.93
Gross profit margin (%)	37.8	38.1	38.3	38.5	38.7
Operating profit (EBITDA) margin (%)	31.1	31.5	31.8	32.1	32.3
Net profit margin (%)	10.7	13.5	16.0	18.1	20.0
Return on capital employed (%)	22.6	26.1	28.5	29.8	30.2
Break-even (% of installed capacity)	40.7	38.5	36.3	34.1	31.9

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 330 working days a year.
- Selling price of ₹47,300 per MT, excluding GST, held constant through the projection.
- Raw materials at 44.2% of sales, packing materials at 3.3%, power and fuel at 5.2%, and selling and distribution at 3%.
- Wages and salaries rise by 5% a year; repairs and administrative overheads rise by 5% a year.
- Working capital based on 30 days of raw material, 3 days of work in progress, 15 days of finished goods and 45 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

On these illustrative assumptions, a precipitated silica from rice husk ash unit of 5.2 MT per day costs ₹396.28 lakh to set up, earns an average return of 22.9% on that investment and pays back in about 3.4 years. An average DSCR of 1.88 and break-even at 36.3% of capacity point to a project that can carry its bank debt. Actual figures depend on the location, the machinery chosen, input prices and the promoter's plans, which is why a full report is prepared for each project.

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A Annexure: monthly loan repayment schedule

Term loan of ₹297.21 lakh at 10.5% a year. Amounts in ₹ lakh.

No.	Month	Opening balance	Interest	Principal	Instalment	Closing balance
1	Apr 2027	297.21	2.60	–	2.60	297.21
2	May 2027	297.21	2.60	–	2.60	297.21
3	Jun 2027	297.21	2.60	–	2.60	297.21
4	Jul 2027	297.21	2.60	–	2.60	297.21
5	Aug 2027	297.21	2.60	–	2.60	297.21
6	Sep 2027	297.21	2.60	–	2.60	297.21
7	Oct 2027	297.21	2.60	4.33	6.93	292.88
8	Nov 2027	292.88	2.56	4.37	6.93	288.51
9	Dec 2027	288.51	2.52	4.41	6.93	284.11
10	Jan 2028	284.11	2.49	4.44	6.93	279.66
11	Feb 2028	279.66	2.45	4.48	6.93	275.18
12	Mar 2028	275.18	2.41	4.52	6.93	270.66
13	Apr 2028	270.66	2.37	4.56	6.93	266.10
14	May 2028	266.10	2.33	4.60	6.93	261.50
15	Jun 2028	261.50	2.29	4.64	6.93	256.86
16	Jul 2028	256.86	2.25	4.68	6.93	252.17
17	Aug 2028	252.17	2.21	4.72	6.93	247.45
18	Sep 2028	247.45	2.17	4.76	6.93	242.68
19	Oct 2028	242.68	2.12	4.81	6.93	237.88
20	Nov 2028	237.88	2.08	4.85	6.93	233.03
21	Dec 2028	233.03	2.04	4.89	6.93	228.14
22	Jan 2029	228.14	2.00	4.93	6.93	223.21
23	Feb 2029	223.21	1.95	4.98	6.93	218.23
24	Mar 2029	218.23	1.91	5.02	6.93	213.21
25	Apr 2029	213.21	1.87	5.06	6.93	208.14
26	May 2029	208.14	1.82	5.11	6.93	203.04
27	Jun 2029	203.04	1.78	5.15	6.93	197.88
28	Jul 2029	197.88	1.73	5.20	6.93	192.68
29	Aug 2029	192.68	1.69	5.24	6.93	187.44
30	Sep 2029	187.44	1.64	5.29	6.93	182.15
31	Oct 2029	182.15	1.59	5.34	6.93	176.81
32	Nov 2029	176.81	1.55	5.38	6.93	171.43
33	Dec 2029	171.43	1.50	5.43	6.93	166.00
34	Jan 2030	166.00	1.45	5.48	6.93	160.53
35	Feb 2030	160.53	1.40	5.53	6.93	155.00
36	Mar 2030	155.00	1.36	5.57	6.93	149.43
37	Apr 2030	149.43	1.31	5.62	6.93	143.80
38	May 2030	143.80	1.26	5.67	6.93	138.13
39	Jun 2030	138.13	1.21	5.72	6.93	132.41

No.	Month	Opening balance	Interest	Principal	Instalment	Closing balance
40	Jul 2030	132.41	1.16	5.77	6.93	126.64
41	Aug 2030	126.64	1.11	5.82	6.93	120.82
42	Sep 2030	120.82	1.06	5.87	6.93	114.95
43	Oct 2030	114.95	1.01	5.92	6.93	109.02
44	Nov 2030	109.02	0.95	5.98	6.93	103.05
45	Dec 2030	103.05	0.90	6.03	6.93	97.02
46	Jan 2031	97.02	0.85	6.08	6.93	90.94
47	Feb 2031	90.94	0.80	6.13	6.93	84.80
48	Mar 2031	84.80	0.74	6.19	6.93	78.62
49	Apr 2031	78.62	0.69	6.24	6.93	72.37
50	May 2031	72.37	0.63	6.30	6.93	66.08
51	Jun 2031	66.08	0.58	6.35	6.93	59.72
52	Jul 2031	59.72	0.52	6.41	6.93	53.32
53	Aug 2031	53.32	0.47	6.46	6.93	46.85
54	Sep 2031	46.85	0.41	6.52	6.93	40.33
55	Oct 2031	40.33	0.35	6.58	6.93	33.76
56	Nov 2031	33.76	0.30	6.63	6.93	27.12
57	Dec 2031	27.12	0.24	6.69	6.93	20.43
58	Jan 2032	20.43	0.18	6.75	6.93	13.68
59	Feb 2032	13.68	0.12	6.81	6.93	6.87
60	Mar 2032	6.87	0.06	6.87	6.93	–