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TEMPLATES & SAMPLES

A sample TEV report

Wire and cable manufacturing

An original, fictional project reference for owners, finance teams and technical reviewers.

PROJECT W-01	ILLUSTRATIVE CASE
Location	India | leased industrial premises
Product	Copper conductor, PVC-insulated building wire
Financial horizon	Seven operating years
Model units	INR lakh and 90 m coil equivalents

Understand the structure. Replace the assumptions. Test the risks.

Includes a technical concept, implementation plan, cost and funding schedules, linked financial statements, debt coverage and downside cases.

Fictional educational example. No actual client, site inspection, lender approval or professional certification is represented.

Contents

Reading this reference

This is an original fictional study of Project W-01, a proposed wire and cable manufacturing unit in India. All project names, capacities, costs, selling prices, funding terms and projections are teaching assumptions. No real promoter, bank appointment, site inspection, quotation, certification or customer order is represented.

Use it to understand how a TEV report connects engineering, evidence, economics and risks. Replace every assumption with verified project information before drawing a commercial conclusion. It is not a lender-approved format or a signed professional opinion.

What this example covers

A leased industrial unit producing copper conductor, PVC-insulated building wire. One 90-metre coil equivalent is used to keep the model traceable across production, materials, revenue and working capital. Other cable constructions would require separate technical and commercial models.

How to adapt it

1. Agree the recipient, project boundary and terms of reference.
2. Build an evidence register and record all unresolved inputs.
3. Replace product, process and capacity assumptions together.
4. Rebuild costs, funding and monthly commissioning cash flow.
5. Recalculate downside cases and document the conditions for viability.

Reading the numbers

Amounts are in INR lakh unless a table states otherwise. INR 100 lakh equals INR 1 crore. Y0 is the combined construction and funding period; Y1-Y7 are seven full operating years. Tables display two decimals, while calculations retain full precision. Small displayed rounding differences are possible.

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For the editable Word version or a project-specific scope, email ramesh@gobitcon.in or contact Bitcon on WhatsApp at +91 99866 89895. The public PDF can be used as a reference starting point.

Executive assessment

The illustrative base case produces positive operating cash generation and repays the modelled term loan over six instalments after a one-year principal moratorium. However, its result is sensitive to the spread between copper input cost and wire selling price. An adverse combined case produces a funding shortfall.

Measure	Illustrative base case
Nameplate capacity	300,000 coils of 90 metres equivalent a year
Production ramp	55% in Y1; 85% from Y5
Fixed investment	900.00 lakh
Project funding requirement	1,054.51 lakh, including initial working-capital margin and cash buffer
Term loan / equity	630.00 / 424.51 lakh
Separate peak cash-credit draw	717.00 lakh; illustrative facility limit 750 lakh
Y1 sales / EBITDA	4,125.00 / 450.75 lakh
Minimum / weighted DSCR	2.77x / 4.61x
Project IRR / NPV at 12%	36.50% / 1,569.13 lakh

Conditions before reliance

Validate product acceptance and net realised prices, secure copper procurement and price-reset terms, obtain equipment throughput guarantees, confirm all approvals, prove equity availability and agree lender-specific working-capital eligibility. Without this evidence, the output remains an illustrative calculation.

The IRR includes an assumed Y7 release of working capital and disposal at net book value. DSCR uses an explicitly stated conventional formula; neither is a lender sanction criterion. No external approval has been obtained.

Project definition and boundaries

Parameter	Assumption and appraisal implication
Project identity	Project W-01: fictional greenfield unit; no incorporated entity is asserted.
Location	Assumed leased industrial premises in Karnataka. Site, title, zoning and access remain unverified.
Products	Copper conductor PVC-insulated building wire, modelled as a uniform 2.5 mm^2, 90 m coil equivalent. No actual product certification is claimed.
Commercial channel	Illustrative distributor and electrical-contractor sales in India. No firm purchase orders assumed.
Operating calendar	300 days; two shifts of eight hours. Annual utilisation includes commercial ramp and operating losses.
Study boundary	Fixed investment, operating business and external working-capital borrowing through Y7. Land purchase, export sales, subsidies and expansion are excluded.
Decision addressed	What evidence and operating conditions would be needed to support the proposed investment and debt service?

Separate a product unit from a sales mix

The coil equivalent is a modelling device. A real factory may sell different conductor sizes, voltage ratings, lengths and insulation grades. Convert each SKU into conductor tonnes, machine minutes, packaging units and net revenue; do not apply this one-unit margin to the entire catalogue.

Change control

Any change to product mix, site, equipment, capacity or commissioning date should trigger a coordinated revision of technical schedules, capex, working capital and the financing model. Maintain a dated revision log and one approved baseline.

Scope, method and evidence

A real assignment should distinguish documents received, independently corroborated facts, site observations and unresolved assumptions. In this reference, every project input is an assumption: there has been no due diligence or site work.

Workstream	Method to perform in an actual assignment	Evidence required
Technical	Review process, equipment balance, infrastructure and construction readiness.	Supplier specifications; layouts; utility offers; site records.
Market	Test volumes, prices, competition and customer qualification.	Customer interviews; orders; price histories; competitor checks.
Financial	Rebuild cost, funding, operating cash flow and sensitivities.	Quotations; sanction terms; accounts; cost sheets.
Management	Assess execution, production, finance and sales capabilities.	CVs; track record; organisational roles; reference checks.
Risk	Link each material uncertainty to a downside result and closing action.	Risk register; responsible owner; dated closure evidence.

Evidence register example

Input ID	Current status	Required replacement
E01: land / lease	Assumed	Executed lease, permitted use and legal review.
E02: machinery	Assumed	Comparable vendor quotes and guaranteed outputs.
E03: sales	Assumed	Net realisation and customer offtake evidence.
E04: funding	Assumed	Equity proof and lender-agreed debt terms.

Terms of reference should define exclusions, reliance parties, information cut-off, fieldwork, review rounds, confidentiality and the treatment of unavailable evidence.

Promoter and management assessment

No real promoter profile is provided. The following role structure is assumed only to illustrate what the assessment should test. A lender-facing report must establish beneficial ownership, funding ability, relevant experience and any material conflicts from actual records.

Role	Proposed accountability	Evidence to verify
Project sponsor	Equity contribution, investment decisions and escalation.	Funding sources; net worth support; board approvals.
Project manager	Programme, procurement, installation and readiness gates.	Comparable project delivery record; weekly dashboard.
Plant / quality lead	Production yield, qualification, traceability and dispatch release.	Wire manufacturing experience; quality plan; test competency.
Commercial lead	Distributor onboarding, quotations, credit control and price resets.	Customer pipeline; credit policy; commercial references.
Finance lead	Model, banking, cash flow, statutory records and reporting.	Finance systems; month-end controls; liquidity forecast.

Governance during construction

Use a monthly steering review covering committed cost, paid cost, completion, forecast commissioning date, unresolved approvals and funding headroom. Record decisions and identify who can authorise an overrun.

Related parties and independence

Identify related-party suppliers, lenders, landlords and customers. Explain how commercial terms are benchmarked. A real independent consultant should state the appointing party, reporting line and any services that could create a conflict.

Key open item

This sample cannot establish management capability or equity availability. Both remain mandatory inputs to an actual appraisal conclusion.

Market and customer validation

This sample contains no claim about current national wire-market size or growth. Its sales ramp is an input to be tested, not a forecast established by market research. A useful appraisal works from reachable customers and net realisation before relying on broad industry growth.

Segment	Validation question	Evidence to collect
Distributors	How many active outlets can the project serve, and at what monthly sell-through?	Dealer interviews, credit requests, inventory movement and competing offers.
Electrical contractors	Which specifications and vendor qualifications are mandatory?	Approved-make lists, tender conditions, project pipeline and payment history.
OEM / institutional buyers	Does the plant meet qualification, testing and delivery requirements?	Trial orders, audit reports and qualification timetable.
Replacement / retail	What repeat demand and warranty expectations can the brand support?	Channel feedback, returns policy and net selling-price observations.

Build a bottom-up sales bridge

Y1 requires 165,000 coil equivalents. For illustration, 25 distributors selling 400 coils a month would contribute 120,000 coils; contractor orders would need to supply the remaining 45,000. These are hypothetical channel targets, not commitments. Test ramp-up and concentration separately.

Competition and price discipline

Compare like-for-like conductor content, insulation grade, test compliance, credit days, freight and dealer incentives. A quoted catalogue price cannot be used as the factory net realisation. Validate seasonality and the lag between copper repricing and sales repricing.

Products, pricing and materials

Per 90 m coil equivalent, Y1	Illustrative amount
Net selling price, excluding recoverable indirect taxes	INR 2,500
Copper purchased	2.08 kg at INR 900/kg = INR 1,872
PVC compound	0.50 kg at INR 130/kg = INR 65
Packaging and labels	INR 38
Total direct material	INR 1,975
Power and variable consumables	INR 70
Total variable cash cost	INR 2,045
Contribution before fixed costs	INR 455 per coil, or 18.20% of revenue

Material balance

At the illustrative copper density of 8,960 kg/m³, a nominal 2.5 mm² conductor over 90 m contains about 2.016 kg of copper. The 2.08 kg purchase allowance gives an approximate 96.9% material yield. The difference represents losses and recoverable scrap; no scrap sale credit is included in the base case.

Physical quantities at nameplate output

At 300,000 coils: 27 million conductor metres, 624 tonnes of purchased copper and 150 tonnes of compound annually. These are engineering approximations. Validate conductor resistance, actual stranding geometry, compound thickness, tolerances and scrap recovery against the chosen product specifications.

Pricing convention

Selling price and all variable unit costs increase by 3% a year. Fixed costs increase by 5%. The model assumes the same real product mix throughout. In practice, separate copper pass-through clauses from conversion margin and customer discounts.

Manufacturing process and controls

Process step	Purpose and principal control
1. Incoming material receipt	Check copper rod and compound identity, certificates, weights and batch traceability; quarantine nonconforming material.
2. Drawing and annealing	Reduce conductor diameter and obtain required flexibility. Control die condition, lubrication, line speed and annealing settings.
3. Stranding / bunching	Build the specified conductor configuration. Control strand count, lay and conductor resistance.
4. Insulation extrusion	Apply compound uniformly. Monitor centring, thickness, temperature, cooling and in-line defect detection.
5. Testing and release	Perform applicable routine, acceptance and type tests through competent facilities, with calibrated equipment and retained records.
6. Coiling and packing	Verify declared length, identification, traceability and pack integrity. Release only conforming batches.
7. Dispatch and feedback	Record customer, batch, quantity and transport condition. Track returns and feed defects back into process correction.

Inspection hold points

Incoming material approval precedes production. First-off approval follows a die, compound or product change. Dispatch requires quality release. Define who may clear each hold point and what evidence is retained.

Boundary of this description

This is a process outline for appraisal. It is not a machine operating procedure, electrical design or product certification instruction. Equipment suppliers and qualified technical personnel must define detailed safe operation and test requirements.

Capacity and bottleneck assessment

Stage	Illustrative sustainable capacity	Interpretation
Drawing	250 kg/hour × 4,800 h × 65% = 780 t/year	Exceeds 624 t copper purchase requirement at nameplate output.
Stranding	120 m/min × 288,000 min × 85% × 98% = 28.79 million m	Allowance combines availability and quality yield.
Extrusion	120 m/min × 288,000 min × 85% × 98% = 28.79 million m	Equivalent to about 319,872 coils of 90 m.
Coiling / packing	1,000 released coils/day × 300 days = 300,000 coils	Sets the assumed line nameplate capacity.

Avoid applying efficiency twice

Nameplate capacity here is already constrained by the modelled sustainable coiling output. Sales utilisation of 55-85% is applied once to that 300,000-coil capacity. The stage-specific availability factors above are technical screening assumptions; they are not applied again to revenue.

Operating year	Y1	Y2	Y3	Y4	Y5-Y7
Utilisation	55%	65%	75%	80%	85%
Coils / year	165,000	195,000	225,000	240,000	255,000
Equivalent million metres	14.85	17.55	20.25	21.60	22.95

What needs to be verified

Obtain guaranteed speeds by product size, changeover times, power consumption, maintenance windows, staffing, buffer storage and rejection history. Vendor nameplate speed alone does not establish saleable annual output. Trial runs should document output, quality and consumption simultaneously.

Site, utilities and layout

Assume a leased 20,000 sq ft industrial building, subject to engineering confirmation. A preliminary allocation is shown below; it is not a constructed layout. Lease tenure must cover the intended operating and financing period with suitable access and alteration rights.

Area	Indicative allocation	Review needed
Production	9,000 sq ft	Machine clearances, lifting access and material flow.
Raw materials	3,500 sq ft	Load-bearing capacity, segregation and secure copper storage.
Finished goods	3,000 sq ft	Dispatch access, inventory flow and protected storage.
Lab / utilities	2,000 sq ft	Separation, ventilation and equipment servicing.
Office / welfare / circulation	2,500 sq ft	Occupancy, exits, amenities and circulation.

Utility assumptions

Assume 400 kVA connected electrical capacity and approximately 8 kWh per coil equivalent for costing. At an assumed INR 7/kWh, electricity contributes INR 56 of the INR 70 variable conversion allowance; INR 14 covers variable consumables. Tariff, demand charges and power quality require local confirmation and a detailed load study.

Water and auxiliary systems

Assume recirculating cooling with 10 m^3/day make-up capacity as a preliminary design allowance, subject to an equipment water balance. Confirm drainage, fire protection, compressed air, ventilation, earthing and waste handling. Site utility approvals and operating costs must be checked before finalising capex.

Site conclusion

No site suitability opinion is possible without location documents and inspection. Flood exposure, access, soil and floor loading, fire access, permitted use and utility connection lead times remain unresolved.

Capital investment and procurement

Fixed investment category	INR lakh	Scope assumption
Leasehold fit-out	90.00	Floors, cable trenches and internal works.
Drawing / annealing equipment	150.00	One assumed package.
Stranding / bunching equipment	100.00	Capacity matched to reference product.
Extrusion line	180.00	Pay-off, insulation and cooling package.
Coiling / packing	70.00	Length control, coiling and packing.
Laboratory	35.00	Testing and calibration set-up.
Utilities and electrical works	95.00	Power, cooling and auxiliary systems.
Installation and commissioning	40.00	Erection, supplier services and trials.
Pre-operative costs	50.00	Includes illustrative construction interest of 15.00.
Contingency	90.00	Unallocated construction allowance.
Total fixed investment	900.00	No land acquisition.

Procurement review

Obtain comparable quotations that identify taxes, freight, duties, civil interfaces, spares, installation, output guarantees, warranty, training and payment milestones. Reconcile supplier exclusions with the project budget. No vendor quotations support the above allowances.

For teaching simplicity all INR 900 lakh is treated as one capitalised asset pool, depreciated over ten years. Real accounting, tax depreciation, contingency use and capitalisation eligibility require separate review. Recoverable indirect taxes and their timing are omitted; fund any actual bridge requirement.

Implementation milestones

The example assumes an eight-month construction period before Y1. This is separate from the consultant's TEV study turnaround. Procurement lead times, site readiness and approvals must be tested before setting an actual commercial-operation date.

Period	Milestone / completion evidence	Accountable party
Month 1	Project scope, lease due diligence, funding plan and baseline budget agreed.	Sponsor / project manager
Months 1-2	Technical specifications frozen; comparable bids reviewed; equipment orders released.	Technical lead / procurement
Months 2-4	Fit-out, utility applications and civil interfaces ready against approved drawings.	Project manager / contractors
Months 3-6	Equipment manufactured, inspected, delivered and reconciled to orders.	Suppliers / procurement
Months 6-7	Installation, utility energisation and integrated checks completed.	Suppliers / plant lead
Months 7-8	Trial output meets product and throughput criteria; staff trained.	Plant lead / quality head
End Month 8	Required permissions in place; funding and working capital available; commercial release authorised.	Sponsor / finance / quality

Critical dependencies

Track utility connection, extrusion-line delivery, statutory permissions and product qualification on the critical path. An equipment delivery date is not a production-ready date. Include time for defect rectification and repeat trials.

Delay review

For any revised date, recompute construction interest, overheads, escalation, customer commitments and loan repayment alignment. This annual example does not model construction drawdowns month by month; a real financing case should include that schedule.

Parties and responsibilities

Party	Main responsibility	Key hand-off
Promoter / sponsor	Provide complete records, arrange equity, approve scope and own business decisions.	Approved information pack and signed representations.
TEV consultant	Assess evidence, question assumptions, model viability and state qualifications within appointment.	Draft findings, queries and final report to agreed recipient.
Lender	Confirm appointment acceptance, appraisal scope, credit conditions and funding terms.	Terms of reference, queries and sanction decision.
Equipment vendors	State guaranteed capacity, consumption, delivery and testing obligations.	Specifications, quotations, inspection and trial records.
Project manager / contractors	Coordinate construction, site interfaces, progress and cost control.	Programme, progress evidence and completion documents.
Finance / tax / legal advisers	Validate entity, funding, accounting, title, lease and applicable obligations.	Verified financial and legal inputs.
Quality / EHS specialists	Identify applicable standards, operating permissions, testing and safe systems.	Compliance matrix, tests and readiness clearance.

TEV study workflow

Scope and appointment completeness check technical and market review model and sensitivities draft / query resolution final issue. Agree the evidence owner and due date for each open question. Separate promoter assertions from the consultant’s assessment.

Indicative consulting timetable

Bitcon typically plans around two to three weeks after complete inputs, agreed scope and appointment, and site access where needed. Complex projects and unresolved information can require longer. The programme should specify when the draft and final report are due.

Operating team and quality system

Annual fixed cash costs, Y1	INR lakh	Illustrative scope
Payroll and benefits	150.00	30-person staffing allowance.
Premises lease	48.00	Assumed annual rent.
Maintenance	36.00	Planned servicing and fixed maintenance support.
Administration and selling	42.00	Office, commercial support and general overheads.
Insurance and other fixed costs	24.00	Budget allowance, not an insurance quotation.
Total	300.00	Escalates 5% annually.

Staffing assumption

The 30-person allowance comprises 18 production staff, four quality / maintenance staff, four stores / dispatch staff and four management / commercial / administration staff. Verify shift rosters, supervision, relief coverage and outsourced services before relying on this cost.

Quality management

Maintain raw-material batch traceability, in-process inspection, calibrated test equipment, final inspection, retention records and a nonconformance register. Product acceptance should be tied to the applicable standards and customer specifications, not simply to production speed.

Operational controls

Monitor copper purchase-to-output reconciliation, energy per coil, first-pass yield, downtime, customer complaints, overdue receivables and finished stock ageing. Investigate material variances before changing standard costs. Assign approval rights for scrap disposal and inventory write-offs.

Approvals and environmental review

The following is a due-diligence register, not a declaration that a particular permission is universally required or already obtained. Requirements depend on the exact product, site, process and current rules. Engage qualified local specialists and consult the relevant authorities.

Area to check	Required project evidence	Owner
Land use / building / lease	Permitted industrial use, building approvals, lease rights and access.	Legal / project manager
Factory / occupational safety	Applicable registrations, safety provisions, machinery guarding and operating procedures.	HR / EHS specialist
Pollution control / waste	Applicable consents, waste classification, storage and authorised disposal arrangements.	Environmental adviser
Electrical / fire / utilities	Sanctioned power, electrical and fire approvals where applicable, emergency arrangements.	Electrical / EHS lead
Product conformity	Applicable Indian Standards, quality-control orders, licences, test methods and customer qualifications.	Quality head
Water / emissions / discharge	Water source, balance, cooling, ventilation and discharge arrangements appropriate to site.	Utilities / environmental lead

Environmental and social issues to assess

Review copper and PVC scrap handling, drawing fluids, annealing and process heat, electrical energy use, noise, lifting operations, packaging waste and emergency response. Check working conditions and competence of contractors. Avoid describing a project as compliant without supporting evidence.

Official starting points: Bureau of Indian Standards and the applicable state pollution control authority. The checklist does not interpret or reproduce current regulations.

Funding structure and opening position

Uses at Y0	INR lakh
Fixed investment	900.00
Initial working-capital margin reserved as cash	129.51
Minimum cash buffer	25.00
Total project funding requirement	1,054.51

Sources at Y0	INR lakh
Term loan	630.00
Sponsor equity	424.51
Total sources	1,054.51

Working-capital borrowing is separate

Cash credit is drawn during operations, not counted as a second source for fixed investment. The base case uses 75% of net operating working capital, rising to 717.00 lakh in Y7. An illustrative 750 lakh facility gives limited headroom at maturity; actual bank eligibility and drawing power may differ.

Opening balance sheet at commissioning

Fixed assets of 900.00 lakh plus cash of 154.51 lakh equal the term loan and equity above. Opening inventory, receivables, payables and cash-credit balance are zero. The initial margin is held as cash and absorbed into the first operating year’s working-capital build.

Funding assumptions

The Y0 period aggregates construction expenditures and funding. All sponsor equity is assumed available at commissioning; its source has not been verified. Additional funding for cost overruns is not an automatic bank commitment. Construction interest is already included in fixed investment and is not charged again in Y1.

Working-capital assessment

Annual balances use a 365-day denominator. Inventory is simplified as 30 days of variable cash cost; receivables are 45 days of net sales; supplier credit is 30 days of direct material cost. A real appraisal should separate raw material, work in progress, finished goods and eligible receivables.

INR lakh	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Inventory	277.34	337.59	401.22	440.80	482.40	496.88	511.78
Receivables	508.56	619.06	735.73	808.32	884.60	911.14	938.48
Less: trade payables	267.84	326.04	387.48	425.71	465.89	479.87	494.26
Net working capital	518.05	630.61	749.46	823.41	901.12	928.15	955.99
Cash credit: 75%	388.54	472.96	562.10	617.56	675.84	696.11	717.00

How the funding moves

Net operating working capital = inventory + receivables - trade payables. Cash-credit draw = 75% of this amount. The remaining 25% is funded from the initial margin and retained operating cash. Changes in both working capital and cash-credit debt appear in the cash-flow statement.

Interest and liquidity

Cash-credit interest is 11% on the average opening and closing annual balance. Opening borrowing is zero in Y1. The model retains a formula-based cash-credit draw even when retained cash grows; optional cash sweeps are not assumed. A real treasury model should test seasonal peaks and surplus cash deployment.

Bank review items

Confirm stock and debtor eligibility, ageing limits, margin by asset category, creditor deductions, stock audits, collateral and drawing-power calculations. A positive annual cash balance can conceal a monthly funding gap. The separate 750 lakh illustrative limit is not a sanction.

Financial assumptions and conventions

Driver	Base assumption
Capacity / operating days	300,000 coils / 300 days
Utilisation Y1-Y7	55%, 65%, 75%, 80%, 85%, 85%, 85%
Y1 net price / variable cost	INR 2,500 / INR 2,045 per coil
Price and variable-cost growth	3% a year
Y1 fixed cost / annual growth	INR 300 lakh / 5%
Depreciation	Straight line over 10 years on INR 900 lakh
Effective cash tax	25% of positive pre-tax profit; no loss carry-forward
Term loan	INR 630 lakh; 10% interest; average annual balance
Repayment	Y1 principal moratorium; six equal INR 105 lakh instalments in Y2-Y7
Cash credit	75% of net working capital; 11% on average balances
Cash retention	No dividends; no incremental maintenance capex beyond modelled operating maintenance
Discount / terminal convention	12%; recover working capital and remaining net book value at end Y7

The tax rate is an illustrative modelling input, not the statutory rate for an actual entity. The same simplified effective rate is used for unlevered cash flow. No deferred tax, minimum tax, tax depreciation differences or tax losses are modelled. GST, duties and credits need a separate actual-project schedule.

Limits of annual projections

Annual averaging simplifies interest and can conceal seasonal cash needs. A real case needs monthly construction and ramp-up cash flows, staged disbursements, repayment dates, maintenance investment and product-specific operating assumptions.

Production, sales and operating costs

Driver	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Coils (000)	165.00	195.00	225.00	240.00	255.00	255.00	255.00
Utilisation (%)	55.00	65.00	75.00	80.00	85.00	85.00	85.00
Price (INR/coil)	2,500.00	2,575.00	2,652.25	2,731.82	2,813.77	2,898.19	2,985.13

INR lakh	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Sales	4,125.00	5,021.25	5,967.56	6,556.36	7,175.12	7,390.37	7,612.08
Direct materials	3,258.75	3,966.79	4,714.37	5,179.53	5,668.34	5,838.39	6,013.55
All variable costs	3,374.25	4,107.38	4,881.47	5,363.10	5,869.25	6,045.32	6,226.68
Fixed cash costs	300.00	315.00	330.75	347.29	364.65	382.88	402.03
EBITDA	450.75	598.87	755.35	845.97	941.22	962.16	983.37

Model bridge

Volume = nameplate capacity × utilisation. Revenue = volume × net price / 100,000. Direct materials = volume × (copper + compound + packaging) / 100,000. Variable cash costs also include power and variable consumables. EBITDA is revenue less variable and fixed cash costs.

Cost-driver interpretation

Copper is the largest assumed variable input. Base-case price and variable-cost escalation preserve the contribution ratio, while utilisation absorbs fixed costs. This makes the margin sensitive to any delay in passing copper price changes through to customers.

The “all variable costs” row already includes direct materials; do not add both rows when calculating EBITDA. All sales are assumed collectible within the stated debtor cycle; no bad-debt charge is included.

Projected profit and loss

INR lakh	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Revenue	4,125.00	5,021.25	5,967.56	6,556.36	7,175.12	7,390.37	7,612.08
Variable costs	3,374.25	4,107.38	4,881.47	5,363.10	5,869.25	6,045.32	6,226.68
Fixed cash costs	300.00	315.00	330.75	347.29	364.65	382.88	402.03
EBITDA	450.75	598.87	755.35	845.97	941.22	962.16	983.37
Depreciation	90.00	90.00	90.00	90.00	90.00	90.00	90.00
EBIT	360.75	508.87	665.35	755.97	851.22	872.16	893.37
Term interest	63.00	57.75	47.25	36.75	26.25	15.75	5.25
Cash-credit interest	21.37	47.38	56.93	64.88	71.14	75.46	77.72
Profit before tax	276.38	403.73	561.17	654.34	753.83	780.96	810.40
Cash tax	69.10	100.93	140.29	163.58	188.46	195.24	202.60
Profit after tax	207.29	302.80	420.88	490.75	565.37	585.72	607.80

Interpretation

Y1 EBITDA is 450.75 lakh, equivalent to 10.93% of revenue. Y1 profit after tax is 207.29 lakh. The increase in subsequent earnings relies on both the assumed sales ramp and sustained contribution per coil.

Accounting boundary

This is an illustrative appraisal statement, not statutory accounts. Cash tax equals the model tax charge, the asset pool uses a simplified depreciation policy, and there are no dividends, exceptional items or deferred taxes. Actual financial reporting will require the applicable accounting policies.

Projected balance sheet

INR lakh	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Net fixed assets	810.00	720.00	630.00	540.00	450.00	360.00	270.00
Inventory	277.34	337.59	401.22	440.80	482.40	496.88	511.78
Receivables	508.56	619.06	735.73	808.32	884.60	911.14	938.48
Cash / (funding gap)	322.29	581.95	958.11	1,415.38	1,946.33	2,510.29	3,096.12
Total assets	1,918.18	2,258.60	2,725.05	3,204.50	3,763.33	4,278.30	4,816.38
Retained earnings	207.29	510.09	930.96	1,421.72	1,987.09	2,572.81	3,180.61
Term debt	630.00	525.00	420.00	315.00	210.00	105.00	0.00
Cash-credit debt	388.54	472.96	562.10	617.56	675.84	696.11	717.00
Trade payables	267.84	326.04	387.48	425.71	465.89	479.87	494.26

Equity, constant each year	INR lakh
Paid-in sponsor equity	424.51

Reconciliation

Total assets = net fixed assets + inventory + receivables + cash. Total liabilities and equity = paid-in equity + cumulative profit after tax + term debt + cash-credit debt + trade payables. These totals reconcile at full model precision for every projected year.

Why cash accumulates

All earnings remain in the company, no dividends are paid and cash-credit borrowing follows the stated working-capital formula. The statement therefore shows accumulated cash alongside cash-credit debt. This is a transparent modelling convention, not a proposed treasury policy.

A negative cash figure in a stress case is a funding gap requiring fresh funding or operational changes; it is not cash that a business can actually hold. No automatic rescue borrowing has been inserted.

Cash flow and debt repayment

INR lakh	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Opening cash	154.51	322.29	581.95	958.11	1,415.38	1,946.33	2,510.29
Profit after tax	207.29	302.80	420.88	490.75	565.37	585.72	607.80
Add: depreciation	90.00	90.00	90.00	90.00	90.00	90.00	90.00
Less: change in WC	518.05	112.56	118.85	73.95	77.71	27.03	27.84
Add: change in CC	388.54	84.42	89.13	55.46	58.28	20.28	20.88
Less: TL principal	0.00	105.00	105.00	105.00	105.00	105.00	105.00
Net cash movement	167.77	259.66	376.16	457.27	530.95	563.96	585.84
Closing cash	322.29	581.95	958.11	1,415.38	1,946.33	2,510.29	3,096.12

Cash-flow formula

Net cash movement = profit after tax + depreciation - increase in net operating working capital + increase in cash-credit borrowing - term-loan principal repayment. Cash interest and tax are already reflected in profit after tax.

INR lakh	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Opening term debt	630.00	630.00	525.00	420.00	315.00	210.00	105.00
Principal repayment	0.00	105.00	105.00	105.00	105.00	105.00	105.00
Closing term debt	630.00	525.00	420.00	315.00	210.00	105.00	0.00
Term interest	63.00	57.75	47.25	36.75	26.25	15.75	5.25

Y1 moratorium applies to principal only; interest is paid. Average-balance annual interest approximates intra-year amortisation and does not represent six actual equal-dated bullet payments. An actual sanction must be modelled on its precise repayment and interest schedule.

Debt service and break-even

INR lakh	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Cash accrual for DSCR	360.29	450.55	558.13	617.50	681.62	691.47	703.05
Term debt service	63.00	162.75	152.25	141.75	131.25	120.75	110.25
DSCR (times)	5.72	2.77	3.67	4.36	5.19	5.73	6.38
After WC coverage (x)	3.66	2.60	3.47	4.23	5.05	5.67	6.31

Definitions

Conventional DSCR = (PAT + depreciation + term-loan interest) / (term-loan principal + term-loan interest). Cash-credit interest is already deducted in PAT. “After WC coverage” also subtracts the increase in net working capital and adds the change in cash-credit borrowing to the numerator.

Minimum DSCR is 2.77x. Weighted DSCR is 4.61x, calculated as the sum of numerators divided by the sum of debt service across Y1-Y7. It is not an arithmetic average of annual ratios. Minimum coverage after the working-capital movement is 2.60x.

Y1 break-even measure	Illustrative result
Unit contribution	INR 455
Cash operating break-even	65,934 coils; 21.98% of nameplate capacity
EBIT break-even, including depreciation	85,714 coils; 28.57% of nameplate capacity

Interpretation

Cash operating break-even covers fixed operating costs only. EBIT break-even also covers depreciation. Neither covers financing costs, principal repayment or incremental working capital. They should not be described as debt-service break-even or a lender covenant.

Project returns and terminal value

Project free cash flow is calculated before financing: EBIT less a 25% tax on positive EBIT, plus depreciation, less the change in net operating working capital. The initial fixed investment is a Y0 outflow. The model invests working capital during Y1-Y7 as the business grows.

Period	Unlevered cash flow, INR lakh
Y0	-900.00
Y1	-157.49
Y2	359.09
Y3	470.16
Y4	583.03
Y5	650.71
Y6	717.09
Y7	1,958.18

At the end of Y7, the model adds 955.99 lakh of working-capital recovery and 270.00 lakh of fixed-asset disposal at net book value. Total terminal recovery is 1,225.99 lakh. Without that recovery, operating Y7 free cash flow is 732.18 lakh.

Return measure	Result
Project IRR	36.50%
NPV at an assumed 12% discount rate	1,569.13 lakh

The 12% discount rate is a scenario input, not an independently estimated WACC. The IRR is for the project, not sponsor equity. Financing flows and the cash buffer are excluded from both the project investment and terminal release. No perpetual-growth value is assumed. Actual liquidation, taxes, collection losses and disposal costs may change recoveries.

Sensitivity and downside results

Each case is recalculated from Y0 with the stated change, holding other inputs constant. Additional capex is funded entirely by equity. Initial margin and cash-credit borrowing adjust to each case. These are alternative underwriting cases, not forecasts of a shock occurring midway through operations.

Case	Min DSCR	NPV at 12%	Lowest cash
Base case	2.77x	1,569.13	322.29
Selling price -5%	1.62x	558.96	168.38
Copper input +10%	1.04x	32.65	60.17
Utilisation -10 points	2.16x	1,108.76	222.82
Capital cost +10%	2.78x	1,501.62	324.54
Both interest rates +2 points	2.56x	1,569.13	309.92
Receivables 60 days	2.70x	1,463.83	317.04
Combined: price -5%, copper +10%	-1.34x	-1,078.98	-1,293.64

What the downside shows

A 10% copper-input increase without a selling-price adjustment reduces debt coverage sharply. Combining that increase with a 5% selling-price decline produces negative coverage and a funding gap. The base case therefore cannot support an unconditional viability conclusion.

Funding constraints matter

Working-capital debt in the sensitivity model continues at 75% of requirement and is not automatically capped at the illustrative 750 lakh facility. The 60-day receivable case needs more than that limit: fresh bank availability must be tested. Negative cash in any case must be resolved; no lender is assumed to fund it.

NPV and cash values are INR lakh. A capex increase funded by equity can slightly raise conventional DSCR because higher depreciation lowers the simplified tax charge; project NPV still falls. Interest-rate changes affect debt coverage, but not the unlevered project NPV.

Risk register and closing conditions

Material risk	Effect on viability	Required action / owner
Copper / price mismatch	Conversion spread contracts; debt coverage deteriorates.	Commercial lead: validate price-reset clauses and exposure limits.
Slow customer qualification	Utilisation ramp and cash collections are delayed.	Sales / quality: secure trials, qualification dates and staged offtake.
Equipment underperformance	Saleable output or quality falls below plan.	Technical lead: obtain guarantees and witness performance trials.
Long receivable cycle	Working-capital borrowing exceeds availability.	Finance: set credit limits, ageing triggers and committed headroom.
Construction / approval delay	Costs rise before revenue begins.	Project manager: monitor critical path and closure evidence.
Insufficient equity	Funding gap before commissioning or under stress.	Sponsor: establish verified funds and overrun support.
Unverified site / permissions	Operation may be delayed or constrained.	Legal / EHS: complete site and approval due diligence.

Decision gates

Before ordering equipment: establish site rights, product scope and a funded budget. Before drawdown: meet the lender’s conditions and verify equity. Before commissioning: prove utilities, quality, operating permissions and working capital. Before final TEV issue: resolve material evidence gaps or state their effect clearly.

Residual risk

Mitigation reduces uncertainty but does not guarantee project success. Record which assumptions remain judgement calls, who owns the risk and the measurable condition that would trigger a revised appraisal.

Illustrative conclusion and conditions

On the stipulated assumptions, the reference project is technically plausible as a balanced wire-manufacturing line and financially positive in the base model. That is a conditional model result. It is not a finding about an actual site, sponsor or business.

What supports the base case

The assumed process capacities exceed the coiling bottleneck; the product contribution covers fixed costs at the modelled utilisation; the scheduled term debt is repaid; and the balance sheets and cash flows reconcile. These relationships demonstrate the structure of an appraisal.

What prevents a final real-project opinion

No verified promoter funds, supplier quotations, site records, approvals, market interviews, customer orders or lender terms have been supplied for this fictional project. Those omissions are substantive and cannot be closed by the strength of a spreadsheet result.

Conditions to resolve

1. Validate the target product and all required conformity arrangements.
2. Confirm vendor outputs, process losses, utilities and installation cost.
3. Substantiate net selling price, channel ramp and credit terms.
4. Agree a credible copper-price pass-through mechanism.
5. Demonstrate equity and sufficient monthly working-capital availability.
6. Recalculate schedule, tax, financing and downside cases using verified inputs.

How to write the actual conclusion

State the information cut-off, evidence relied on, material uncertainties, key sensitivities and precise closing conditions. Explain whether missing evidence changes the viability view or limits the confidence of the assessment. The lender retains its credit decision.

There is no signature block or professional certification because no actual project appraisal has been performed. This sample must not be submitted as an independent TEV report for a real borrower.

Appendix: evidence pack and review log

Folder	Records to assemble
01 Entity and promoters	Constitution, ownership, authorisations, profiles, financial standing and equity evidence.
02 Site and approvals	Lease/title, layout, land use, utilities, applicable licences and approval tracker.
03 Technical	Product specifications, process, capacity balance, supplier quotes, utility balance and staffing.
04 Market	Customer evidence, net price basis, competition, pipeline, credit and qualification terms.
05 Cost and funding	Capex reconciliation, commitments, financing terms, working capital, contingencies and schedule.
06 Model and risks	Linked projections, formula definitions, downside cases, reconciliation checks and risk register.

Query and revision log format

Field	What to record
Query	One specific issue, linked to an input or report section.
Owner / due date	Named provider, target date and escalation contact.
Response / evidence	Document reference, version, source and date received.
Disposition	Closed, open or accepted limitation, with its effect on the conclusion.
Revision	Changed assumption, reason, author and review sign-off.

Before final issue

Reconcile cost to funding, capacity to sales, materials to output, debt opening to closing, profit to retained earnings and cash flow to the balance sheet. Confirm that headline ratios and conclusions match the latest approved model.

Appendix: glossary and adaptation notes

Term	Meaning in this reference
TEV	Techno-Economic Viability: an assessment of technical, market and financial viability.
EBITDA / EBIT	Earnings before interest, tax, depreciation and amortisation / earnings before interest and tax.
PAT	Profit after the modelled tax charge.
DSCR	Debt service coverage ratio; use the formula agreed with the recipient.
Net working capital	Operating inventory plus receivables less trade payables.
Cash credit	Illustrative short-term working-capital borrowing; separate from the term loan.
IRR / NPV	Internal rate of return / net present value of the defined project cash flows.
Coil equivalent	A 90 m reference unit used to connect production and economics.

Source and authorship note

The project narrative, assumptions and financial model were created as an original Bitcon educational reference. No client report, actual engagement result or proprietary financial schedule is reproduced. There is no external market-data source behind the fictional prices or volume assumptions.

Useful starting points

Bitcon: TEV report guide for project owners
Bitcon: TEV report preparation checklist
Bureau of Indian Standards: verify applicable product standards

Need an editable starting point?

Request the Word version from ramesh@gobitcon.in or WhatsApp +91 99866 89895. For a project-specific assessment, share the sector, location, project cost, funding purpose and desired submission date.