

NIIR PROJECT CONSULTANCY SERVICES

Premium Industrial Consulting | NPCS

CLIENT SUCCESS STORY

Establishing a Calcium Silicate Insulation Board Manufacturing Unit

From Investment Vision to Industrial Reality — Guided by Expert Feasibility & Strategy

CLIENT: M/s. UAL Industries Ltd, Kolkata, West Bengal

INDUSTRY: Large-Scale Industrial Manufacturing

PROJECT: Calcium Silicate Insulation Board Manufacturing Unit

STATUS: Client Approved — Proceeding to Implementation

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ABOUT NPCS — NIIR PROJECT CONSULTANCY SERVICES

Niir Project Consultancy Services (NPCS) is one of Asia's premier industrial knowledge and project consultancy organisations. With over three decades of uninterrupted service, NPCS has established itself as the trusted advisory partner for entrepreneurs, MSMEs, large corporations, and institutional investors seeking technically validated and commercially viable manufacturing ventures.

NPCS is part of Asia's leading industrial knowledge ecosystem with thousands of project profiles and global consulting expertise.

Core Services

- Detailed Project Reports (DPR) — Comprehensive, bankable project documentation
- Techno-Economic Feasibility Studies — Engineering + commercial viability analysis
- Market Research & Demand Analysis — Industry intelligence and growth forecasting
- Manufacturing Opportunity Identification — Sector screening and project selection
- Financial Viability Evaluation — ROI, IRR, payback modelling
- Engineering & Technology Advisory — Plant layout, machinery, and process design
- Strategic Investment Advisory — End-to-end guidance from concept to execution

NPCS By the Numbers

30,000+ Detailed Project Reports Published	50+ Countries Served Globally	30+ Years of Industrial Expertise	250,000+ Industrial Projects Delivered
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CLIENT OVERVIEW

Client Name	M/s. UAL Industries Ltd
Location	Kolkata, West Bengal, India
Industry Segment	Large-Scale Industrial Manufacturing
Project Recommended	Calcium Silicate Insulation Board Manufacturing Unit
Consultancy Provided	Techno-Economic Feasibility, Market Assessment, DPR Inputs, Financial Viability, Strategic Advisory
Implementation Status	Approved — Client Proceeding with Project Implementation

Client Background & Investment Objective

M/s. UAL Industries Ltd, a growth-oriented enterprise headquartered in Kolkata, West Bengal, approached NPCS with a clear mandate: identify and evaluate a high-potential manufacturing opportunity that could deliver lasting commercial returns and contribute to their long-term industrial portfolio.

The client's core investment criteria included:

- Long-term profitability with stable revenue generation
- Sustainable operational viability with consistent demand
- Strong industrial and institutional market potential
- Resource-based technical feasibility in the target region
- Scalable growth prospects aligned with industry trends

NPCS was entrusted to conduct a rigorous, end-to-end project evaluation — from opportunity identification to investment confidence building — ensuring every recommendation was grounded in data-driven analysis and industry expertise.

PROBLEM STATEMENT & INVESTMENT CHALLENGES

Manufacturing investment decisions are complex, high-stakes undertakings. Without professional guidance, investors face a multitude of challenges that can erode capital, delay returns, and increase operational risk. M/s. UAL Industries Ltd recognised several critical uncertainties before engaging NPCS:

<p>⚠ Market Uncertainty Identifying sectors with genuine, growing demand versus saturated or declining markets.</p>	<p>⚠ Technical Complexity Understanding plant design, machinery selection, and production processes without engineering expertise.</p>
<p>⚠ Financial Risk Quantifying investment costs, working capital needs, and realistic return timelines before committing capital.</p>	<p>⚠ Raw Material Viability Assessing local sourcing feasibility and supply chain stability for uninterrupted production.</p>
<p>⚠ Regulatory Landscape Navigating environmental clearances, industrial licensing, and compliance requirements for manufacturing units.</p>	<p>⚠ Project Selection Paralysis Evaluating dozens of potential manufacturing opportunities with no structured framework for comparison.</p>

NPCS addressed each of these challenges through a structured, multi-phase consultancy engagement — providing the clarity, data, and strategic direction needed to move forward with confidence.

OUR APPROACH & CONSULTING METHODOLOGY

NPCS follows a rigorous, five-phase consulting methodology designed to eliminate uncertainty and maximise investment confidence. Each phase builds on the previous, creating a comprehensive and integrated project assessment.

01

Project Identification & Opportunity Screening

NPCS conducted a comprehensive evaluation of manufacturing sectors relevant to the client's investment profile, regional strengths, and capital objectives. Multiple opportunities were assessed against criteria including market size, technical accessibility, raw material availability, and competitive landscape. Calcium Silicate Insulation Board manufacturing emerged as the optimal recommendation.

02

Market Analysis & Demand Validation

A detailed market assessment was conducted covering current demand levels, growth trends, end-user industries, and import substitution opportunities. Demand drivers including India's infrastructure expansion, energy efficiency mandates, and fire safety standards were thoroughly analysed.

03

Technical Feasibility Assessment

NPCS evaluated the complete technical architecture of the proposed plant — including manufacturing process flow, machinery specifications, plant layout, utility requirements, and production capacity planning. Environmental compliance and operational sustainability were also assessed.

04

Financial Modelling & Investment Evaluation

A comprehensive financial model was constructed covering total project cost, fixed and working capital requirements, revenue projections, profitability analysis, return on investment (ROI), internal rate of return (IRR), and payback period estimation.

05

Strategic Advisory & Implementation Roadmap

NPCS provided actionable strategic guidance covering implementation phasing, procurement planning, team requirements, and go-to-market approach — equipping the client with a clear, executable roadmap to proceed with confidence.

SCOPE OF SERVICES DELIVERED

NPCS delivered a comprehensive suite of consulting services covering the full investment evaluation lifecycle:

<p>DPR Preparation</p> <p>Inputs for a comprehensive Detailed Project Report covering all technical, commercial, and financial aspects.</p>	<p>Plant Layout Design</p> <p>Analysis of optimal plant configuration, workflow, and space utilisation for efficient production operations.</p>	<p>Machinery Selection</p> <p>Identification and specification of appropriate manufacturing equipment, vendors, and procurement strategy.</p>
<p>Financial Modelling</p> <p>Detailed cost estimation, revenue projection, ROI, IRR, and payback period analysis for investment planning.</p>	<p>Market Validation</p> <p>Primary and secondary market research confirming demand levels, pricing benchmarks, and target customer segments.</p>	<p>Implementation Roadmap</p> <p>Phase-wise execution plan with timelines, milestones, procurement sequence, and resource planning.</p>

PROJECT EXECUTION & TIMELINE

The NPCS engagement was structured across four clearly defined phases, ensuring a systematic progression from opportunity discovery to investment decision:

Phase	Activity	Duration	Key Milestone
Phase 1	Client Brief & Investment Criteria Definition	Week 1–2	Alignment on project objectives and investment parameters
Phase 2	Market Research & Opportunity Identification	Week 3–5	Calcium Silicate Insulation Board selected as optimal opportunity
Phase 3	Technical & Financial Feasibility Assessment	Week 6–9	Full techno-economic viability confirmed
Phase 4	DPR Inputs, Strategic Advisory & Reporting	Week 10–12	Client briefed; implementation decision approved

TECHNICAL INSIGHTS — CALCIUM SILICATE INSULATION BOARD

Calcium silicate insulation boards are high-performance, non-combustible thermal insulation materials manufactured using a precise hydrothermal synthesis process. They deliver superior fire resistance, thermal stability, and mechanical durability, making them indispensable across multiple industrial and construction applications.

Manufacturing Process Overview

▶	▶	▶	▶	▶
Raw Material Preparation	Slurry Mixing	Moulding & Forming	Hydrothermal Curing	Drying, Cutting & QC
Lime, silica, reinforcing fibres, and additives are prepared and proportioned to exact formulation specifications.	Materials are combined with water under controlled conditions to form a homogeneous, stable manufacturing slurry.	The slurry is cast into moulds or formed into sheets using pressure filtration or flow-on techniques.	Green boards are subjected to high-pressure steam autoclaving, initiating tobermorite crystal formation for structural integrity.	Boards are kiln-dried, precision-cut to specification, surface-finished, and subjected to quality assurance testing.

Key Application Areas

<p>Industrial & Process Applications</p> <ul style="list-style-type: none"> • Thermal insulation in steel, cement, and glass industries • Pipe and equipment insulation in chemical processing plants • High-temperature furnace and kiln lining systems • Power generation facility insulation 	<p>Construction & Infrastructure</p> <ul style="list-style-type: none"> • Fire-rated wall and ceiling systems in commercial buildings • Passive fire protection in institutional infrastructure • Energy-efficient envelope solutions in green buildings • Structural fire protection in industrial facilities
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FINANCIAL & MARKET ANALYSIS

Investment Overview

NPCS conducted a structured financial evaluation of the proposed Calcium Silicate Insulation Board Manufacturing Unit. The assessment confirmed the project's commercial viability and long-term return potential, providing the client with a clear financial picture for investment planning.

Financial Indicators

Total Project Investment: Large-Scale Capital Investment

Plant & Machinery: Core Production Infrastructure

Working Capital: Estimated for Initial Operations

Return on Investment (ROI): Attractive Long-Term Returns

Internal Rate of Return (IRR): Exceeds Standard Benchmarks

Payback Period: Estimated Within Industry Norms

Market Growth Drivers

- India's industrial infrastructure expansion programme
- Rapid growth in commercial and institutional construction
- Tightening fire safety codes and energy efficiency standards
- Rising demand from power and process industries
- Growing import substitution opportunity in insulation materials
- Government push for green and energy-efficient buildings

Market Demand Outlook

The calcium silicate insulation board market in India is experiencing sustained growth, driven by accelerating industrialisation, construction activity, and increasing regulatory emphasis on thermal efficiency and fire safety compliance. Key demand sectors include:

Power & Energy

Power plants, refineries, and energy facilities require high-performance thermal and fire insulation systems.

Steel & Cement

High-temperature industrial processes in steel and cement manufacturing demand durable insulation solutions.

Commercial Construction

Fire-rated and thermally efficient building systems are increasingly mandated in new commercial developments.

Infrastructure Projects

Institutional buildings, hospitals, airports, and transport infrastructure require certified fire protection systems.

RESULTS & OUTCOMES

The NPCS consulting engagement delivered measurable, tangible outcomes that directly supported M/s. UAL Industries Ltd in making a confident, well-informed investment decision:

- ✓ **Investment Confidence Achieved:** Through rigorous feasibility analysis, the client gained complete confidence in the technical and commercial viability of the proposed project, eliminating guesswork from the investment decision.
- ✓ **Market Opportunity Validated:** NPCS confirmed strong and growing market demand for calcium silicate insulation boards across multiple end-user industries, providing a solid commercial foundation for the project.
- ✓ **Technical Viability Confirmed:** The manufacturing process, plant requirements, and machinery specifications were fully evaluated and validated, reducing technical implementation risk significantly.
- ✓ **Financial Roadmap Established:** A clear financial model — covering capital requirements, operating costs, revenue projections, and return metrics — was developed, enabling informed capital planning.
- ✓ **Risk Profile Substantially Reduced:** By addressing all major uncertainty areas upfront, NPCS substantially lowered the investment risk profile before any capital was committed.
- ✓ **Implementation Ready:** The client received a complete strategic advisory package, including an implementation roadmap, enabling them to proceed directly to project execution.

CLIENT TESTIMONIAL



NPCS provided us with valuable feasibility insights and strategic guidance that helped us evaluate a promising industrial manufacturing opportunity with complete confidence. Their professional approach, depth of market understanding, and structured advisory methodology were instrumental in supporting our investment planning. We are now moving forward with implementation, assured by the clarity and rigour of the analysis provided.

— M/s. UAL Industries Ltd, Kolkata, West Bengal

WHY CHOOSE NPCS

When the stakes of industrial investment are high, the quality of your consulting partner determines outcomes. NPCS brings a unique combination of deep domain expertise, global perspective, and proven methodology that sets us apart:

- **Proven Industrial Expertise**
Three decades of continuous experience across hundreds of manufacturing sectors and thousands of client engagements.
- **Global Market Intelligence**
Insights drawn from engagements in 50+ countries, providing internationally benchmarked analysis and global best practices.
- **Data-Driven Feasibility**
Every recommendation is grounded in rigorous market research, technical assessment, and financial modelling — not assumptions.
- **End-to-End Project Support**
From initial opportunity identification through to implementation advisory, NPCS supports every stage of the investment journey.
- **Risk Mitigation Focus**
Our consultancy is designed to identify, quantify, and mitigate investment risks before capital is deployed — protecting client interests.
- **Bankable Project Reports**
NPCS DPRs are recognised and accepted by financial institutions, government bodies, and institutional investors across India and internationally.
- **Sector Depth Across Industries**
From food processing and chemicals to advanced materials and industrial manufacturing, NPCS brings unmatched sectoral breadth.
- **Trusted by 250,000+ Projects**
Our track record speaks for itself — a legacy of successful project recommendations and client outcomes spanning three decades.

CONCLUSION

The successful engagement with M/s. UAL Industries Ltd exemplifies NPCS's core mission: transforming investment uncertainty into informed, confident action. By delivering rigorous technical analysis, market-validated insights, and strategic advisory in a structured and professional framework, NPCS enabled the client to move from concept to implementation readiness with clarity and conviction.

Calcium silicate insulation boards represent a compelling manufacturing opportunity — strategically aligned with India's industrial growth trajectory, infrastructure investment pipeline, and escalating focus on energy efficiency and fire safety compliance. M/s. UAL Industries Ltd is now positioned to capitalise on this opportunity with a well-validated project blueprint and a clear path to sustainable commercial success.

This engagement underscores the transformative value of professional industrial consultancy. With the right advisory partner, the risks inherent in manufacturing investment are substantially reduced, and the pathway to long-term industrial profitability becomes clear, measurable, and achievable.

Strategic Value Delivered by NPCS

Investment Clarity • Risk Reduction • Market Validation • Technical Confidence •
Financial Roadmap • Implementation Readiness

READY TO BUILD YOUR NEXT INDUSTRIAL PROJECT?

Partner with Niir Project Consultancy Services (NPCS) to transform your investment idea into a profitable industrial venture. Our expert team is ready to guide you from concept to commissioning.

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Your Manufacturing Vision Starts Here.

Niir Project Consultancy Services (NPCS) — Enabling Industrial Excellence Since 1993