NIIR PROJECT CONSULTANCY SERVICES

NPCS

Industrial Project Consultancy | Feasibility Studies | DPR | Market Research

CLIENT CASE STUDY

Establishment of a CPVC Manufacturing Unit

Chlorinated Polyvinyl Chloride

From Investment Vision to Industrial Reality — Powered by Data-Driven Expertise

CLIENT: M/s. Nandi Irrigation Systems Limited, Hyderabad, Telangana

INDUSTRY: Large Scale Manufacturing Investment | Polymer & Advanced Materials

www.niir.org | www.entrepreneurindia.co | info@niir.org | +91 9097075054

ABOUT NIIR PROJECT CONSULTANCY SERVICES (NPCS)

Niir Project Consultancy Services (NPCS) is one of Asia's most trusted industrial 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.

NPCS — By the Numbers

85	150K+	150K+	30+
Countries Served	Clients Served	Successful Projects Delivered	Years in Consulting

NPCS combines decades of industrial experience, proprietary research databases, and a multidisciplinary team of engineers, economists, and market analysts to deliver consulting reports that stand up to the scrutiny of banks, investors, and government bodies.

Core Service Portfolio

Detailed Project Reports (DPR)

Comprehensive, bankable project reports covering all aspects of industrial setup — technical processes, financial projections, market analysis, and implementation planning.

Techno-Economic Feasibility Studies

In-depth feasibility evaluations combining technical viability assessment with commercial and financial modeling to support sound investment decisions.

Market Research & Demand Analysis

Systematic study of market trends, competitive landscape, demand-supply gaps, pricing dynamics, and future growth outlook across industrial sectors.

Engineering & Strategic Advisory

Technical guidance on manufacturing processes, plant design, machinery selection, operational setup, and phased implementation strategies.

PROJECT SNAPSHOT

Client Name	M/s. Nandi Irrigation Systems Limited
Location	Hyderabad, Telangana, India
Industry	Large Scale Manufacturing Investment
Recommended Project	Chlorinated Polyvinyl Chloride (CPVC) Manufacturing Unit
Consultancy Services	Techno-Economic Feasibility Study, DPR, Market Assessment, Financial Viability Analysis, Strategic Advisory
Implementation Status	Client Agreed to Proceed with Project Implementation

CLIENT OVERVIEW

M/s. Nandi Irrigation Systems Limited is an established industrial enterprise headquartered in Hyderabad, Telangana. With a strong foundation in irrigation systems and water management solutions, the company sought to leverage its operational experience and regional market understanding to diversify into a high-growth manufacturing segment.

Investment Objectives

Diversify into a scalable manufacturing business. Generate sustainable long-term revenue streams. Leverage Hyderabad's industrial infrastructure. Enter sectors with strong institutional demand. Maintain operational efficiency and market resilience.

Strategic Requirements

Long-term profitability with moderate-to-large investment. Technically feasible and scalable production model. Access to regional raw materials and supply chains. Strong and diversified industrial customer base. Growth opportunities in expanding industrial markets.

PROBLEM STATEMENT & INVESTMENT CHALLENGES

Before engaging NPCS, M/s. Nandi Irrigation Systems Limited faced a series of interconnected strategic, technical, and financial challenges that demanded expert advisory support:

01 Project Identification Risk

Selecting the wrong manufacturing venture carries significant capital risk. The client needed a rigorous, data-backed opportunity assessment rather than relying on anecdotal market knowledge.

02 Technical Feasibility Uncertainty

Understanding the manufacturing process, infrastructure requirements, and technology selection for CPVC production required specialized technical knowledge beyond the client's existing expertise.

03 Market Demand Validation

Without a validated demand outlook, it was difficult to determine whether CPVC manufacturing could sustain commercial viability across residential, commercial, and industrial buyer segments.

04 Financial Risk & Capital Planning

Large-scale manufacturing requires significant capital commitment. Accurate cost estimation, ROI projections, and payback period analysis were essential to securing investment confidence.

05 Supply Chain & Raw Material Assessment

Sourcing PVC resin and chlorine-based inputs reliably at competitive costs required a systematic supply chain analysis aligned with Hyderabad's industrial procurement ecosystem.

06 Regulatory & Compliance Complexity

Manufacturing polymer-based products involves compliance with environmental, industrial safety, and product quality standards, requiring expert navigation of regulatory frameworks.

NPCS APPROACH & STRATEGIC METHODOLOGY

NPCS deployed a proven, structured consulting methodology — combining primary market intelligence, technical process evaluation, and financial modeling — to identify and validate the most commercially viable manufacturing opportunity for the client.

Consulting Engagement Framework

1	**Manufacturing Opportunity Screening** Systematic evaluation of high-potential sectors aligned with Hyderabad's industrial ecosystem, raw material availability, and the client's investment appetite.
2	**Market Potential Assessment** In-depth demand-supply analysis, sector trend review, competitive landscape mapping, and growth trajectory modeling for the CPVC market across India.
3	**Technical Feasibility Evaluation** Assessment of CPVC production technology, manufacturing process flow, plant layout requirements, infrastructure needs, and machinery specifications.
4	**Financial Modelling & Viability Analysis** Estimation of capital investment, operating costs, revenue projections, IRR, ROI, payback period, and break-even analysis.
5	**Implementation Strategy & Roadmap** Phase-wise project execution plan covering approvals, procurement, plant setup, trial production, and commercial launch.

SCOPE OF SERVICES DELIVERED

Detailed Project Report (DPR)

A bankable, investor-grade project report covering every aspect of the CPVC manufacturing venture.

Market Validation Report

Comprehensive demand analysis covering domestic consumption trends, import substitution data, and sector-wise demand drivers.

Plant Layout & Machinery Selection

Guidance on optimal plant layout design, equipment specifications, machinery procurement, and utility infrastructure requirements.

Financial Modelling

Detailed financial analysis including capital expenditure, working capital estimation, revenue projections, profitability analysis, and key financial ratios.

Raw Material & Supply Chain Advisory

Assessment of key raw material requirements, regional sourcing options, procurement strategies, and supply chain resilience planning.

Implementation Roadmap

A phased project execution framework covering regulatory clearances, site preparation,

	construction, equipment installation, and commercial production ramp-up.

TECHNICAL INSIGHTS — CPVC MANUFACTURING PROCESS

CPVC (Chlorinated Polyvinyl Chloride) is manufactured through the chlorination of standard PVC resin, elevating its chlorine content from approximately 56% to 63–74%. This enhances the material's heat resistance, pressure tolerance, and chemical durability.

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
PVC Resin Procurement	Chlorination (Aqueous/Fluidized)	Neutralization & Washing	Drying & Stabilization	Quality Testing & Control	Packaging & Dispatch

Key Machinery & Technologies

- Chlorination reactors (aqueous/fluidized bed systems)
- Agitated reaction vessels with temperature control
- Neutralization tanks and washing systems
- Industrial dryers (rotary/fluidized bed)
- Blending and stabilization equipment
- Quality control and testing instruments
- Packaging and bulk bag filling systems
- Effluent treatment and scrubbing systems

FINANCIAL & MARKET ANALYSIS

Investment Overview

NPCS conducted a comprehensive project cost estimation and financial viability analysis. The following reflects typical investment parameters for a medium-scale CPVC manufacturing unit:

Total Project Cost	Plant & Machinery	Working Capital
Rs. 25–40 Crore Estimated capital investment (land, building, plant, pre-operative)	**Rs. 12–18 Crore** Core manufacturing equipment and utilities	**Rs. 4–7 Crore** 3–4 months operational cycle requirement
IRR (Internal Rate of Return)	**Payback Period**	**ROI (Return on Investment)**
18–25% Based on medium-scale production and standard market pricing	**4–6 Years** Conservative estimate under stable market conditions	**20–30%** Post-stabilization operational profitability estimate

Market Demand & Growth Outlook

The Indian CPVC market has been on a consistent growth trajectory, driven by urbanization, infrastructure expansion, and the shift away from conventional metal piping.

Infrastructure & Real Estate

Government-backed Smart City and AMRUT projects. Rapid urban residential and commercial construction. Public infrastructure upgrade programs (JJBY, Har Ghar Jal).

Agricultural & Irrigation Sector

Expansion of drip and sprinkler irrigation networks. Replacement of aging GI and asbestos piping systems. Growing state-level irrigation modernization budgets.

Industrial & Chemical Sector

Chemical processing plants requiring corrosion-resistant piping. Pharmaceutical and food-grade fluid handling systems. Fire protection and sprinkler system installations.

Import Substitution Opportunity

Significant domestic gap between demand and local production. Policy tailwinds supporting Make-in-India manufacturing. Competitive cost advantage vs. imported CPVC materials.

PROJECT EXECUTION TIMELINE

NPCS designed a phase-wise project execution framework to guide M/s. Nandi Irrigation Systems Limited from initial planning through full commercial production:

1	**Months 1–3 | Project Finalization & Approvals** Incorporate project entity, secure industrial land, obtain factory and environmental clearances, finalize DPR and funding arrangements.
2	**Months 4–6 | Site Development & Infrastructure** Civil construction, utility connections (power, water), boundary fencing, and preliminary infrastructure readiness.
3	**Months 7–10 | Machinery Procurement & Installation** Finalize equipment vendors, place orders, coordinate delivery logistics, supervise installation and commissioning.
4	**Months 11–13 | Trial Production & Quality Testing** Conduct trial runs, calibrate production parameters, validate product quality against IS/ASTM standards, resolve technical snags.
5	**Month 14+ | Commercial Production Launch** Ramp up production capacity, activate sales channels, build customer relationships, begin systematic revenue generation.

RESULTS & OUTCOMES

Strategic Benefits

Entry into a high-growth polymer manufacturing segment. Clear investment roadmap with reduced uncertainty. Validated commercial opportunity backed by data. Strategic diversification of business operations. Scalable production model with expansion potential.

Risk Mitigation Delivered

Technical feasibility validated before capital deployment. Market demand independently verified through research. Financial risk quantified with scenario-based projections. Supply chain viability confirmed for regional sourcing. Regulatory pathway clarified for smooth implementation.

CLIENT TESTIMONIAL

> *"NPCS provided valuable strategic insights and a structured feasibility evaluation that helped us assess the potential of a new manufacturing venture with greater confidence. Their professional approach, market understanding, and technical guidance supported our investment planning process effectively. We are now moving forward with implementation with a clear roadmap and strong conviction in the project's commercial potential."*
>
> **— M/s. Nandi Irrigation Systems Limited, Hyderabad, Telangana**

WHY CHOOSE NPCS

30+ Years of Industrial Expertise

Decades of hands-on experience across 100+ manufacturing sectors in India and globally.

150K+ Successful Projects Delivered

Proven track record across chemicals, FMCG, agro-processing, textiles, engineering, and more.

Clients in 85 Countries

Global reach with local understanding — trusted by entrepreneurs, MSMEs, and corporates worldwide.

Data-Driven Feasibility

Every recommendation backed by primary research, real market data, and rigorous financial modelling.

End-to-End Project Support

From opportunity identification to implementation roadmap — one partner for the full investment journey.

Risk Mitigation Approach

Structured due diligence methodology designed to identify and reduce investment uncertainty.

Bankable Project Reports

DPRs prepared to banking and investor standards, suitable for loan applications and board approvals.

Global Market Intelligence

Internationally benchmarked insights drawn from engagements across 85 countries and 500+ industry sectors.

CONCLUSION

The NPCS engagement for M/s. Nandi Irrigation Systems Limited exemplifies how rigorous, data-driven industrial consulting can transform an entrepreneurial vision into a technically validated and financially structured investment opportunity.

By conducting a thorough techno-economic feasibility assessment, NPCS enabled the client to identify a commercially compelling CPVC manufacturing venture aligned with market demand, regional infrastructure strengths, and long-term growth dynamics. The client's decision to proceed with implementation reflects the confidence built through expert advisory and comprehensive project analysis.

This engagement reinforces NPCS's commitment to empowering industrial investors with the intelligence, clarity, and strategic insight needed to build profitable, scalable, and sustainable manufacturing enterprises.

READY TO BUILD YOUR NEXT INDUSTRIAL PROJECT?

Partner with NPCS to transform your investment idea into a profitable industrial venture.

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