

# NIIR PROJECT CONSULTANCY SERVICES NPCS

Industrial Advisory | Feasibility Studies | DPRs | Market Research

CLIENT SUCCESS STORY | CASE STUDY

Establishment of an

## HDPE PIPES MANUFACTURING UNIT

for

### M/s. Vensar Constructions Company Limited

Bhopal, Madhya Pradesh, India

*"From Investment Idea to Industrial Reality —  
How NPCS Transformed a Vision into a Viable Manufacturing Venture"*

**INDUSTRY**  
Manufacturing / Infrastructure

**LOCATION**  
Bhopal, Madhya Pradesh

**STATUS**  
Proceeding to Implementation

## □ ABOUT NPCS

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### Niir Project Consultancy Services (NPCS)

NPCS is part of Asia's leading industrial knowledge ecosystem with thousands of project profiles and global consulting expertise. For over three decades, NPCS has been the trusted partner for entrepreneurs, MSMEs, startups, and industrial investors seeking professionally researched, data-driven guidance on manufacturing ventures.

Operating at the intersection of industrial intelligence and strategic advisory, NPCS delivers actionable insights that transform business ideas into profitable, implementable manufacturing projects — backed by rigorous feasibility analysis and deep domain expertise.

### Core Services

#### □ Detailed Project Reports (DPRs)

Bankable, investor-grade project reports covering all aspects of manufacturing feasibility — from plant layout to financial projections.

#### □ Market Research & Demand Analysis

Comprehensive sector-level research covering demand trends, competitive landscape, pricing dynamics, and growth forecasting.

#### □ Techno-Economic Feasibility Studies

In-depth assessments evaluating technical viability, market potential, and financial sustainability of industrial projects.

#### □ Engineering & Strategic Advisory

Expert guidance on manufacturing processes, plant engineering, machinery selection, and go-to-market strategy.

### NPCS by the Numbers



## □ CLIENT OVERVIEW

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### Project Snapshot

<b>Client Name</b>	M/s. Vensar Constructions Company Limited
<b>Location</b>	Bhopal, Madhya Pradesh, India
<b>Industry Sector</b>	Manufacturing — HDPE Pipes / Infrastructure
<b>Project Recommended</b>	HDPE Pipes Manufacturing Unit
<b>Services by NPCS</b>	Techno-Economic Feasibility Study, Market Assessment, Raw Material Analysis, Project Cost Estimation, Financial Viability Evaluation, DPR Inputs, Strategic Advisory
<b>Implementation Status</b>	Client Agreed to Proceed with Project Implementation

### Client Background

M/s. Vensar Constructions Company Limited, headquartered in Bhopal, Madhya Pradesh, is an established business entity with a strong background in the construction and infrastructure sector. Recognizing the strategic potential of manufacturing diversification, the company's leadership team initiated a structured evaluation of investment opportunities in industrial production.

With deep regional knowledge and a robust understanding of infrastructure requirements, Vensar sought a manufacturing opportunity that could capitalize on their existing domain expertise while delivering long-term commercial returns.

### Investment Objectives

The client approached NPCS with a clear mandate: identify a manufacturing investment that aligned with the following strategic goals:

- Achieve long-term profitability through sustainable industrial operations
- Leverage strong and growing market demand in infrastructure-linked sectors
- Establish a manufacturing unit with scalable growth potential
- Capitalize on regional resource availability and supply chain advantages
- Diversify business portfolio beyond core construction activities

□ **PROBLEM STATEMENT & CHALLENGES**

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Before engaging NPCCS, M/s. Vensar Constructions Company Limited faced several critical investment challenges that required expert resolution:

**Market Intelligence Gap**  
Limited access to reliable, sector-specific demand data made it difficult to objectively assess the commercial viability of potential manufacturing investments.

**Technical Feasibility Uncertainty**  
Without specialized manufacturing knowledge, evaluating plant requirements, process flows, and equipment specifications independently was not feasible.

**Financial Risk Evaluation**  
Assessing realistic investment requirements, operational costs, revenue potential, and return timelines demanded structured financial modelling expertise.

**Supply Chain & Raw Material Access**  
Evaluating the regional availability of key raw materials and the reliability of supply chains required sector-level procurement intelligence.

**Regulatory & Compliance Complexity**  
Understanding applicable regulations, environmental clearances, and compliance requirements for a new manufacturing unit required professional guidance.

**Project Selection Uncertainty**  
With numerous manufacturing possibilities available, identifying the single most viable option aligned with the client's resources and regional context required expert screening.

## □ OUR APPROACH & STRATEGY

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NPCS employed a structured, five-phase consulting methodology to evaluate, identify, and validate the most suitable manufacturing opportunity for M/s. Vensar Constructions Company Limited.

01

### **Manufacturing Opportunity Identification**

NPCS evaluated multiple industrial sectors and screened potential manufacturing projects based on market relevance, regional fit, capital requirements, and client capabilities. HDPE Pipes was identified as the strongest opportunity.

02

### **Market Research & Demand Assessment**

Comprehensive analysis of the HDPE Pipes market was conducted — covering current demand, sectoral consumption patterns, growth projections, key buyer segments, pricing trends, and competitive landscape.

03

### **Technical Feasibility Evaluation**

Production process flows, machinery requirements, plant layout considerations, utility needs, and operational parameters were analyzed to establish technical viability and readiness for commercial-scale manufacturing.

04

### **Financial Modelling & Viability Analysis**

A structured financial model was developed covering project cost estimation, working capital planning, production economics, revenue projections, profitability analysis, and key financial indicators including ROI, IRR, and payback period.

05

### **Strategic Advisory & Implementation Roadmap**

NPCS synthesized findings into actionable strategic recommendations, providing the client with a clear implementation pathway, risk mitigation strategy, and a structured plan for project execution.

## □ **SCOPE OF SERVICES DELIVERED**

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NPCS delivered a comprehensive end-to-end consultancy engagement spanning seven critical domains of industrial project assessment and advisory:

### □ **Manufacturing Opportunity Identification**

Systematic identification and shortlisting of viable manufacturing projects aligned with the client's investment profile, regional advantages, and long-term business objectives.

### □ **Plant & Machinery Guidance**

Advisory on key plant requirements, equipment specifications, machinery selection criteria, installed capacity planning, and layout considerations for efficient manufacturing operations.

### □ **Market Validation & Demand Study**

Rigorous market research confirming demand drivers, end-user segments, growth outlook, regulatory environment, and competitive positioning for HDPE pipe products in target markets.

### □ **Implementation Roadmap**

Phase-wise project implementation planning covering site preparation, procurement timelines, equipment installation, trial production, and commercial launch milestones.

### □ **Detailed Project Report (DPR) Inputs**

Preparation of comprehensive DPR inputs covering all project dimensions — from raw material sourcing and production processes to capital investment and financial projections.

### □ **Financial Modelling & Analysis**

Structured financial modelling encompassing capital cost estimation, revenue projections, operating cost analysis, breakeven computation, ROI calculation, and IRR/payback period evaluation.

### □ **Raw Material Availability Assessment**

Evaluation of the regional and national sourcing landscape for primary raw materials — particularly HDPE granules — covering supplier availability, pricing benchmarks, and supply chain resilience.

### □ **Strategic Advisory Support**

Professional strategic guidance enabling informed investment decision-making — covering risk assessment, contingency planning, and positioning strategy for the new manufacturing venture.

## □ PROJECT EXECUTION & TIMELINE

The NPCS consulting engagement was executed in a structured, phased manner — ensuring comprehensive coverage of all feasibility dimensions within an efficient delivery timeline.

Phase	Duration	Key Activities & Milestones
<b>Phase 1</b>	Week 1–2	Client onboarding, requirement mapping, business objective alignment, sector screening, and preliminary project identification
<b>Phase 2</b>	Week 2–3	In-depth market research, demand analysis, end-user segment mapping, competitor benchmarking, pricing assessment, and growth outlook evaluation
<b>Phase 3</b>	Week 3–4	Technical feasibility deep-dive: manufacturing process analysis, plant design inputs, utility requirements, machinery evaluation, and capacity planning
<b>Phase 4</b>	Week 4–5	Raw material sourcing assessment, supply chain mapping, regional availability analysis, and cost benchmarking for HDPE granules and auxiliary inputs
<b>Phase 5</b>	Week 5–6	Financial model development: project cost estimation, revenue projections, cost structures, profitability analysis, ROI/IRR computation, payback estimation
<b>Phase 6</b>	Week 6–7	DPR input preparation, report compilation, strategic recommendations, risk assessment, implementation roadmap development
<b>Phase 7</b>	Week 7–8	Client presentation, findings review, strategic advisory session, client decision facilitation, and confirmation of project implementation intent

## □ TECHNICAL INSIGHTS

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### About HDPE Pipes — Product Overview

High-Density Polyethylene (HDPE) pipes are engineered thermoplastic piping systems manufactured from HDPE resin through an extrusion process. Known for their exceptional durability, chemical resistance, and long operational life, HDPE pipes are the preferred choice across water management, agriculture, infrastructure, and industrial utility applications.

### Manufacturing Process — Step-by-Step

01

#### Raw Material Procurement & Preparation

High-grade HDPE granules (typically MRS 80 or MRS 100 grade) are procured from petrochemical suppliers. Material quality testing is performed to verify MFI (Melt Flow Index), density, and tensile strength before production.

02

#### Extrusion Process

HDPE granules are fed into a single or twin-screw extruder where they are heated, melted, and homogenized. The molten polymer is then pushed through a precision-engineered die head to form the pipe profile.

03

#### Vacuum Sizing & Calibration

The extruded pipe passes through a vacuum sizing tank where water jets and vacuum pressure precisely shape and cool the pipe to the required outer diameter and wall thickness.

04

#### Cooling & Haul-Off

The shaped pipe undergoes further cooling in a water trough, followed by caterpillar-type haul-off systems that maintain consistent pipe tension and alignment throughout the production run.

05

#### Marking, Cutting & Coiling

Continuous online marking is applied to indicate pipe grade, size, and manufacturer details. Pipes are cut to standard lengths (typically 6m or 12m) or coiled for distribution depending on diameter.

06

#### Quality Control & Testing

Finished pipes undergo hydrostatic pressure testing, dimensional inspection, tensile strength evaluation, and visual quality checks in accordance with BIS standards (IS 4984, IS 14333).

07

#### Packaging & Dispatch

Compliant pipes are bundled, labeled, and stored in covered warehouses before dispatch to distributors, contractors, and institutional buyers across the supply chain.

□ **MARKET & FINANCIAL ANALYSIS**

**Market Demand Overview**

The HDPE Pipes market in India is witnessing robust and sustained growth, driven by increasing government investments in water infrastructure, agricultural modernization, urban development, and industrial expansion. India's per capita plastic pipe consumption remains significantly below developed nation benchmarks, indicating substantial headroom for long-term demand growth.

Demand Sector	Market Driver
Water Supply & Distribution	Jal Jeevan Mission, AMRUT, Smart Cities projects
Agricultural Irrigation	PM Krishi Sinchai Yojana, drip/sprinkler adoption
Sewage & Drainage Systems	Urban infrastructure upgrades, sanitation programs
Industrial Fluid Transport	Factory expansions, chemical, pharma, FMCG sectors
Gas & Utility Networks	City gas distribution, CNG expansion programs
Construction & Real Estate	Housing, commercial development, infrastructure projects

**Financial Viability Highlights**

NPCS's techno-economic analysis confirmed the financial attractiveness of the HDPE Pipes Manufacturing Unit. Key financial parameters assessed are presented below:

**Project Investment**  
**Large-Scale Capital Deployment**  
 Suitable for significant industrial investment with scalable capacity expansion

**Market Growth Rate**  
**8–12% CAGR**  
 Projected compound annual growth in HDPE pipes demand (India)

**Payback Period**  
**Moderate Term Recovery**  
 Aligned with industry norms for capital-intensive manufacturing units

**Long-Term Revenue Outlook**  
**Stable & Scalable**  
 Multi-sector demand ensures consistent revenue across market cycles

## □ RESULTS & OUTCOMES

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The NPCCS consultancy engagement delivered measurable and impactful outcomes for M/s. Vensar Constructions Company Limited across multiple dimensions:

- ✓ Successful identification of a commercially viable and technically feasible manufacturing opportunity — the HDPE Pipes Manufacturing Unit — aligned with the client's investment objectives.
- ✓ Comprehensive market validation confirming strong, multi-sector demand supported by government infrastructure programs, agricultural expansion, and industrial growth.
- ✓ Complete techno-economic feasibility assessment providing clarity on plant requirements, production economics, and financial performance metrics.
- ✓ Actionable financial insights covering investment sizing, revenue projections, cost structures, and return timelines — enabling confident capital allocation decision-making.
- ✓ Significant risk reduction through structured assessment of supply chain, raw material availability, market conditions, and regulatory requirements.
- ✓ Strategic positioning of the client for entry into a high-growth, government-priority sector with long-term institutional and commercial demand.
- ✓ Implementation readiness through a structured project roadmap providing a clear path from feasibility approval to operational manufacturing.
- ✓ Client confirmed intent to proceed with project implementation — demonstrating full confidence in NPCCS's findings, recommendations, and strategic guidance.

### Business Impact Summary

✓ <b>Investment Confidence Achieved</b>	✓ <b>Market Risk Significantly Reduced</b>	✓ <b>Strategic Sector Entry Enabled</b>	✓ <b>Implementation Roadmap Delivered</b>
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## □ CLIENT TESTIMONIAL

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*NPCS provided us with valuable feasibility insights and strategic guidance that enabled us to evaluate a strong manufacturing opportunity with full confidence. Their deep market understanding, structured methodology, and techno-economic approach gave us the clarity and conviction we needed to make an informed investment decision. We are proceeding with the HDPE Pipes Manufacturing Unit and look forward to building a successful industrial venture with NPCS's ongoing support.*

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**M/s. Vensar Constructions Company Limited**

Bhopal, Madhya Pradesh | HDPE Pipes Manufacturing Unit

## □ WHY CHOOSE NPCS

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Selecting the right consulting partner is as critical as the investment itself. Here is why entrepreneurs, MSMEs, and industrial investors consistently choose NPCS:

### □ Proven Industrial Expertise

30+ years of specialized experience across 250+ industrial sectors. NPCS has advised on manufacturing projects spanning chemicals, polymers, food processing, pharmaceuticals, engineering, and infrastructure.

### □ Global Market Understanding

Serving clients in 50+ countries with region-specific market intelligence, import-export insights, and global competitive landscape analysis that goes beyond local market data.

### □ Data-Driven Feasibility

Every NPCS recommendation is grounded in primary and secondary research, quantitative financial modelling, and objective market data — eliminating guesswork from high-stakes investment decisions.

### □ End-to-End Project Support

NPCS supports clients from initial opportunity identification through feasibility validation, DPR preparation, financial structuring, and implementation planning — a single integrated consulting partnership.

### □ Risk Mitigation Approach

NPCS's structured assessment methodology systematically identifies, quantifies, and addresses market, technical, financial, supply chain, and regulatory risks before capital is committed.

### □ Bankable, Investor-Grade Reports

NPCS DPRs and feasibility reports are structured to meet banker, investor, and institutional lender requirements — serving as credible documentation for project financing and government scheme applications.

## □ CONCLUSION

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The NPCS engagement with M/s. Vensar Constructions Company Limited demonstrates the transformative power of expert, data-driven industrial consultancy in enabling confident manufacturing investment decisions.

By systematically addressing the key challenges of market intelligence, technical feasibility, financial viability, and implementation planning, NPCS equipped the client with the clarity, confidence, and strategic direction needed to proceed with the HDPE Pipes Manufacturing Unit — a decision backed by comprehensive research, not guesswork.

### Strategic Value Delivered

*NPCS transformed an investment intention into an evidence-based, commercially validated manufacturing opportunity — positioning M/s. Vensar Constructions Company Limited for long-term industrial success in one of India's most strategically important infrastructure sectors.*

### Long-Term Impact

- Entry into a high-growth, government-supported manufacturing sector with multi-decade demand visibility
- Establishment of a scalable industrial asset with potential for capacity expansion and product diversification
- Reduction of investment risk through comprehensive pre-commitment feasibility validation
- Access to a proven consulting methodology that can be applied to future manufacturing investment decisions
- Foundation for long-term business value creation through disciplined, expert-guided industrial project development

# READY TO BUILD YOUR NEXT INDUSTRIAL PROJECT?

Partner with Niir Project Consultancy Services (NPCS) to transform your investment idea into a profitable industrial venture — backed by expert research, data-driven feasibility, and 30+ years of manufacturing consulting excellence.

## Our Services

- Detailed Project Reports (DPRs)
- Techno-Economic Feasibility Studies
- Manufacturing Opportunity Identification
- Market Research & Demand Analysis
- Raw Material Availability Assessment
- Financial Viability Evaluation
- Strategic Industrial Advisory

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