## NIIR PROJECT CONSULTANCY SERVICES

*Engineering the Future of Industrial Investment*

**CLIENT SUCCESS STORY**

# Inner Grooved Copper Tubes

## Manufacturing Unit

***Turning Investment Vision Into Industrial Reality***

Prepared for:

**M/s. Goodluck India Ltd**

Sikandrabad, Uttar Pradesh, India

Industry: HVAC | Refrigeration | Industrial Manufacturing | Consultancy: Techno-Economic Feasibility Study

# 01 | ABOUT NPCS

## Company Profile

Niir Project Consultancy Services (NPCS) is one of India's most trusted industrial consultancy organizations, delivering bankable feasibility studies, Detailed Project Reports (DPRs), and strategic industrial advisory to entrepreneurs, MSMEs, startups, and large-scale investors across the globe.

NPCS is part of Asia's leading industrial knowledge ecosystem with thousands of project profiles and global consulting expertise. Our multi-disciplinary team of engineers, economists, and market researchers brings deep domain knowledge across 500+ manufacturing sectors.

## Core Services

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| ☐ Detailed Project Reports (DPRs) | ☐ Techno-Economic Feasibility Studies |
| ☐ Market Research & Demand Analysis | ☐ Engineering & Technical Advisory |
| ☐ Financial Modeling & Viability Assessment | ☐ Implementation Planning & Strategy |
| ☐ Manufacturing Opportunity Identification | ☐ Raw Material Availability Studies |

## Our Track Record

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| **85**<br>Countries Served | **150K+**<br>Clients Served |
| **150K+**<br>Successful Projects Delivered | **30+**<br>Years in Consulting |

## 02 | PROJECT SNAPSHOT

The following table summarizes the key parameters of the consultancy engagement undertaken by NPCS for M/s. Goodluck India Ltd.

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| **Client Name** | M/s. Goodluck India Ltd |
| **Location** | Sikandrabad, Uttar Pradesh, India |
| **Industry** | HVAC \| Refrigeration \| Industrial Thermal Equipment |
| **Project Recommended** | Inner Grooved Copper Tubes Manufacturing Unit |
| **Investment Scale** | Large-Scale Industrial Investment |
| **Implementation Status** | Client Agreed to Proceed with Project Implementation |
| **Consultancy Services** | Techno-Economic Feasibility Study, Market Assessment, Raw Material Analysis, Technical Feasibility, Project Cost Estimation, Financial Viability, Strategic Advisory |

### Executive Summary

NPCS was engaged by M/s. Goodluck India Ltd to identify a technically feasible and commercially viable manufacturing opportunity aligned with the client's long-term investment goals. Following a structured techno-commercial analysis, NPCS recommended the establishment of an Inner Grooved Copper Tubes Manufacturing Unit — a high-value industrial product with strong, growing demand across HVAC, refrigeration, and industrial heat exchange sectors. The client formally agreed to proceed with project implementation planning.

## 03 | CLIENT OVERVIEW & INVESTMENT OBJECTIVES

### Client Background

M/s. Goodluck India Ltd is an established industrial enterprise headquartered in Sikandrabad, Uttar Pradesh — a strategically located industrial hub in North India. The company sought to diversify its manufacturing portfolio by identifying a new, high-potential industrial venture that could deliver sustained commercial returns.

### Investment Goals

- Long-term profitability and sustainable manufacturing operations
- Entry into a product segment with strong and growing industrial demand
- Scalable production opportunities with expansion potential
- Alignment with regional industrial advantages and supply chain access
- Technically feasible project with manageable capital investment
- Compliance with market trends and future industrial growth trajectories

## 04 | CHALLENGES & PROBLEM STATEMENT

### Key Challenges Faced by the Client

Before engaging NPCS, M/s. Goodluck India Ltd faced several critical decision-making challenges:

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| Market Intelligence Gap: Difficulty identifying the right product with sustained demand in a competitive industrial landscape. | Technical Complexity: Uncertainty around manufacturing processes, machinery, and operational feasibility for new product lines. |
| Financial Risk: Limited visibility into project costs, revenue projections, ROI, and payback timelines. | Supply Chain Uncertainty: Concerns regarding consistent raw material availability at competitive prices. |
| Project Scope Definition: Lack of a structured framework covering plant layout, machinery selection, and capacity planning. | Regulatory Complexity: Need for guidance on compliance, approvals, and industry-specific standards. |

## 05 | NPCS APPROACH & CONSULTING METHODOLOGY

NPCS adopted a structured, data-driven, and phased consultancy methodology to evaluate, identify, and validate the most suitable manufacturing opportunity for M/s. Goodluck India Ltd.

### Step-by-Step Methodology

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| **Step 1** | Manufacturing Opportunity Identification: Evaluated multiple industrial sectors and project alternatives to shortlist commercially attractive opportunities aligned with the client's investment profile. |
| **Step 2** | Market Research & Demand Analysis: Conducted detailed research to assess current and future market demand, competitive dynamics, key buyers, and import substitution potential. |
| **Step 3** | Technical Feasibility Evaluation: Reviewed manufacturing processes, key machinery, plant layout requirements, production capacity, and operational parameters for the recommended project. |
| **Step 4** | Raw Material Assessment: Evaluated the availability, pricing, and sourcing logistics for copper rods, billets, and essential consumables. |
| **Step 5** | Financial Modeling & Viability Assessment: Prepared a comprehensive financial model covering project cost estimates, working capital needs, revenue projections, IRR, ROI, and payback period analysis. |
| **Step 6** | Implementation Roadmap: Provided phase-wise project execution planning covering approvals, procurement, plant setup, trial runs, and commercial production launch. |

### Why Inner Grooved Copper Tubes?

After evaluating multiple industrial opportunities, NPCS identified Inner Grooved Copper Tubes as the optimal recommendation based on the following factors:

- Strong and growing demand across HVAC, refrigeration, and industrial cooling sectors
- High market entry barriers that protect early movers and established manufacturers
- Favourable raw material (copper) availability from established domestic and global supply chains
- Alignment with India's energy efficiency and green infrastructure agenda
- Scalable manufacturing with potential for both domestic sales and export opportunities
- Sikandrabad's proximity to major North India industrial and infrastructure markets

## 06 | SCOPE OF SERVICES DELIVERED BY NPCS

NPCS delivered a comprehensive, end-to-end consultancy engagement covering all critical dimensions required for informed investment decision-making.

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| Detailed Project Report (DPR) Preparation | Plant Layout & Infrastructure Planning |
| Machinery Selection & Technical Specifications | Financial Modeling & Profitability Analysis |
| Market Validation & Demand Forecasting | Raw Material Sourcing & Supply Chain Analysis |
| Implementation Roadmap & Project Planning | Regulatory & Compliance Advisory |
| Strategic Advisory & Investment Guidance | Risk Assessment & Mitigation Framework |

## 07 | PROJECT EXECUTION TIMELINE

The NPCS consultancy engagement was executed in structured phases to ensure thoroughness, accuracy, and timely delivery.

| Phase | Duration | Key Activities |
|---|---|---|
| Phase 1 | Weeks 1-2 | Client briefing, investment goal alignment, initial sector screening |
| Phase 2 | Weeks 3-4 | Market research, demand assessment, product validation |
| Phase 3 | Weeks 5-6 | Technical feasibility: process, machinery, plant layout, capacity |
| Phase 4 | Weeks 7-8 | Raw material analysis, supply chain mapping, cost benchmarking |
| Phase 5 | Weeks 9-10 | Financial modeling: capex, opex, revenue, ROI, IRR, payback |
| Phase 6 | Weeks 11-12 | DPR compilation, review, client presentation, strategic advisory |

# 08 | TECHNICAL INSIGHTS

## About Inner Grooved Copper Tubes

Inner Grooved Copper Tubes are precision-engineered copper tubes with a specially designed internal surface featuring helical grooves. This micro-fin geometry dramatically increases the effective internal surface area, significantly enhancing heat transfer efficiency compared to smooth-bore copper tubes. They are widely used in air conditioning, refrigeration, heat exchangers, and industrial cooling systems.

## Manufacturing Process Overview

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| **Step 1: Raw Material** | High-purity copper rods or billets (Cu >= 99.9%) sourced from certified suppliers. |
| **Step 2: Extrusion/Drawing** | Copper blanks are hot-extruded or drawn through dies to form hollow tube shells. |
| **Step 3: Internal Grooving** | Precision grooving tools or rifled mandrels impart the helical groove profile during the drawing process. |
| **Step 4: Annealing** | Tubes are annealed in controlled furnaces to achieve desired mechanical properties. |
| **Step 5: Straightening & Cutting** | Finished tubes are straightened, cut to specified lengths, and inspected. |
| **Step 6: Quality Inspection** | Pressure testing, dimensional checks, and heat transfer performance validation per ASTM/ISO standards. |
| **Step 7: Packaging** | Finished products are coiled, bundled, labelled, and packed for domestic or export dispatch. |

## Key Machinery & Technologies

- Copper billet heating furnace (gas/electric)
- Extrusion press and tube drawing benches
- Precision internal grooving and rifling equipment
- Continuous annealing furnace
- Straightening and cutting machines
- Hydraulic pressure testing systems
- Dimensional measurement instruments (CMM, OD/ID gauges)
- Coiling, bundling, and packaging lines

# 09 | MARKET OPPORTUNITY & FINANCIAL OVERVIEW

## Market Demand Outlook

The market for Inner Grooved Copper Tubes is underpinned by robust and diversifying demand across multiple high-growth industrial segments.

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| **HVAC & Air Conditioning** | Rapid urbanisation, rising disposable incomes, and commercial real estate growth are driving unprecedented demand for air conditioning systems, directly translating to copper tube consumption. |
| **Refrigeration Sector** | Cold chain infrastructure expansion, food processing industrialisation, and pharmaceutical cold storage growth are accelerating refrigeration equipment production. |
| **Green Energy & Efficiency** | Government mandates for energy-efficient HVAC systems (BEE Star ratings, ECBC norms) favour high-performance inner grooved copper tubes. |
| **Industrial Heat Exchangers** | Power plants, chemical processing units, and industrial cooling systems require precision heat exchange tubes. |
| **Export Potential** | Indian manufacturers benefit from competitive copper processing costs, enabling export to Middle East, Southeast Asia, and African markets. |
| **Import Substitution** | Significant opportunity exists as India currently imports a notable share of specialised copper tubes from China and other sources. |

## Indicative Financial Overview

The following indicative financial parameters were assessed by NPCS as part of the techno-economic feasibility study.

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| **Project Scale** | Medium to Large Scale Manufacturing Unit |
| **Capital Investment** | Assessed based on plant capacity, machinery, land & building, utilities, and pre-operative expenses |
| **Working Capital** | Based on raw material inventory, WIP, and receivables cycle |
| **Revenue Potential** | Linked to plant capacity utilisation and prevailing market prices |
| **IRR** | Favourable IRR projected, exceeding typical industrial benchmarks |
| **Payback Period** | Within standard industrial investment payback norms |
| **Break-Even Point** | Assessed at moderate capacity utilisation, indicating operational resilience |

Note: Detailed financial projections and sensitivity analysis were provided in the full DPR delivered to the client.

# 10 | RESULTS & OUTCOMES

## Business Impact Delivered

The NPCS consultancy engagement delivered measurable value across multiple dimensions:

✔Investment Clarity: The client gained a clear, evidence-based picture of project viability, eliminating guesswork from a high-stakes investment decision.

✔Risk Reduction: Comprehensive risk identification and mitigation strategies significantly de-risked the client's path to investment.

✔Market Confidence: Data-driven demand analysis confirmed a strong and sustainable market opportunity, building investor confidence.

✔Technical Roadmap: A clear technical blueprint covering process, machinery, plant layout, and capacity provided a solid foundation for project execution.

✔Financial Visibility: Detailed financial modeling established realistic revenue, cost, and profitability expectations.

✔Strategic Positioning: The recommended project positions M/s. Goodluck India Ltd to enter a high-value industrial segment with long-term growth tailwinds.

✔Implementation Readiness: A structured project execution roadmap gave the client a clear path from investment decision to commercial production.

✔Client Commitment: M/s. Goodluck India Ltd formally agreed to proceed with project implementation.

## 11 | CLIENT TESTIMONIAL

> *"*
>
> *NPCS provided us with valuable techno-economic guidance and feasibility insights that helped us evaluate a promising manufacturing opportunity with confidence. Their structured approach, in-depth market research, and professional advisory support enabled us to make a well-informed and decisive investment decision. We are impressed by the quality of their Detailed Project Report and look forward to a successful project implementation.*
>
> **— M/s. Goodluck India Ltd, Sikandrabad, Uttar Pradesh**

## 12 | WHY CHOOSE NPCS?

NPCS brings a rare combination of technical depth, market intelligence, financial rigor, and strategic insight that makes it India's most trusted industrial consultancy partner.

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|---|---|
| 30+ Years of Proven Industrial Expertise across 500+ manufacturing sectors. | Global Market Understanding covering 85 countries with localized demand insights. |
| Data-Driven Feasibility powered by primary research, industry databases, and financial modeling. | End-to-End Project Support from opportunity identification to implementation planning. |
| Risk Mitigation Approach with comprehensive risk analysis and contingency frameworks. | Bankable DPRs accepted by banks, investors, and industrial financing institutions. |
| Client-Centric Methodology ensuring recommendations are tailored to each client's goals. | 150k+ DPRs Published — the largest industrial project library in Asia. |

## 13 | CONCLUSION

The NPCS-led consultancy engagement for M/s. Goodluck India Ltd exemplifies what professional, data-driven industrial advisory can achieve. By combining rigorous market research, technical feasibility assessment, and sound financial modeling, NPCS enabled the client to identify a commercially compelling and technically validated manufacturing opportunity — the Inner Grooved Copper Tubes Manufacturing Unit.

In a landscape where industrial investment decisions carry significant financial stakes, NPCS's structured DPR and feasibility-driven approach provided M/s. Goodluck India Ltd with the clarity, confidence, and actionable roadmap needed to commit to project implementation.

This engagement reinforces NPCS's position as a trusted partner for entrepreneurs, MSMEs, and industrial investors seeking to translate investment ideas into profitable, scalable, and sustainable manufacturing ventures.

## 14 | STRATEGIC VALUE DELIVERED

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|---|---|
| **Market Intelligence** | Validated strong and growing demand across HVAC, refrigeration, and industrial heat exchange segments. |
| **Technical Blueprint** | Delivered a comprehensive manufacturing process overview and machinery specification roadmap. |
| **Financial Confidence** | Established clear investment parameters, ROI projections, and payback assessment. |
| **Risk Management** | Identified key investment risks and provided structured mitigation strategies. |
| **Implementation Readiness** | Equipped the client with a phase-wise project execution roadmap for smooth implementation. |
| **Long-Term Growth** | Positioned the client in a high-value product segment aligned with India's industrial growth trajectory. |

# READY TO BUILD YOUR NEXT INDUSTRIAL PROJECT?

## Partner with Niir Project Consultancy Services (NPCS)

*to transform your investment idea into a profitable industrial venture.*

| | |
|---|---|
| Detailed Project Reports (DPRs) | Techno-Economic Feasibility Studies |
| Market Research & Demand Analysis | Engineering & Technical Advisory |
| Financial Viability Evaluation | Strategic Industrial Advisory |

## Get in Touch with NPCS Today

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|---|---|
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