

NIIR PROJECT CONSULTANCY SERVICES

CLIENT CASE STUDY

Manufacturing of Low Toxicity Base Oil from Kerosene

*Transforming Petroleum Feedstock into a High-Value Specialty
Manufacturing Venture*

M/s. Coasts Petroleum Products Co. | Riyadh, Saudi Arabia

Petroleum Products | Industrial Manufacturing | GCC Region

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About Niir Project Consultancy Services (NPCS)

Niir Project Consultancy Services (NPCS) is India's foremost industrial consultancy firm, delivering world-class techno-economic feasibility studies, Detailed Project Reports (DPRs), and strategic industrial advisory services to entrepreneurs, investors, MSMEs, and large industrial conglomerates worldwide.

With over three decades of specialized experience spanning manufacturing, chemicals, food processing, pharmaceuticals, agro-industries, engineering, and petrochemicals, NPCS has established itself as the most trusted name in industrial project evaluation and investment advisory.

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

Core Services

<input type="checkbox"/> Detailed Project Reports (DPR)	Comprehensive bankable reports covering technical, financial & market aspects
<input type="checkbox"/> Techno-Economic Feasibility Study	In-depth evaluation of project viability, costs, and returns
<input type="checkbox"/> Market Research & Demand Analysis	Data-driven insights on market size, competition, and growth trends
<input type="checkbox"/> Engineering & Technical Advisory	Expert guidance on process technology, plant layout, and operations
<input type="checkbox"/> Industrial Investment Advisory	Strategic consulting for investors seeking profitable ventures

NPCS by the Numbers

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

The following table summarizes the key parameters of the engagement between NPCCS and M/s. Coasts Petroleum Products Co.:

Client Name	M/s. Coasts Petroleum Products Co.
Location	Riyadh, Saudi Arabia
Industry	Petroleum Products & Industrial Manufacturing
Project Recommended	Manufacturing of Low Toxicity Base Oil from Kerosene
Consultancy Provided	Techno-Economic Feasibility Study & Detailed Project Advisory
Implementation Status	Client approved — Implementation Planning Phase Initiated

Client Overview

M/s. Coasts Petroleum Products Co. is a Saudi Arabia-based organization with strategic interests in large-scale industrial investment within the petroleum products sector. Headquartered in Riyadh, the company is well-positioned to leverage the Kingdom's substantial petroleum infrastructure, raw material availability, and growing industrial policy framework.

Client Investment Objectives

- Identify and evaluate a profitable, scalable manufacturing venture within the petroleum derivatives segment
- Leverage Saudi Arabia's abundant and cost-competitive raw material base for industrial production
- Develop a project with strong long-term ROI and sustainable operational economics
- Minimize investment risk through evidence-based technical and financial feasibility analysis
- Build a manufacturing business aligned with Saudi Arabia's Vision 2030 industrial diversification goals

Problem Statement & Key Challenges

Before engaging NPCS, M/s. Coasts Petroleum Products Co. faced a complex set of inter-related challenges that needed to be systematically addressed before any capital commitment could be made:

<input type="checkbox"/> Project Identification	Identifying the right industrial venture within the petroleum derivatives sector with strong ROI potential
<input type="checkbox"/> Market Validation	Assessing global and regional demand for low toxicity base oils across multiple end-user industries
<input type="checkbox"/> Technical Complexity	Evaluating the refining and purification technology required to produce low-aromatic, compliant base oils
<input type="checkbox"/> Financial Risk	Determining capital investment requirements, cost structures, and profitability thresholds with accuracy
<input type="checkbox"/> Raw Material Strategy	Mapping kerosene and petroleum feedstock supply chains to ensure operational continuity
<input type="checkbox"/> Regulatory Navigation	Ensuring the project aligned with Saudi and international environmental and industrial safety standards

Our Approach & Consulting Strategy

NPCS deployed its proven five-phase consulting methodology — a structured, data-driven framework developed over 30 years of industrial project advisory — to address the client's needs comprehensively and systematically.

Phase 01	Project Opportunity Identification	NPCS evaluated multiple petroleum derivative segments — including lubricants, specialty chemicals, and process oils — and identified low toxicity base oil manufacturing as the optimal venture given Saudi Arabia's raw material advantage and global market demand.
Phase 02	Market Research & Demand Analysis	Conducted detailed market research covering global demand for low-aromatic base oils, key end-user industries (metalworking, pharmaceuticals, automotive), regional market dynamics, and export potential to Asia, Africa, and Europe.
Phase 03	Technical Feasibility Assessment	Reviewed manufacturing process technologies for converting kerosene through advanced treatment and purification methods. Evaluated plant design options, machinery requirements, production capacity planning, and utility needs.
Phase 04	Financial Modeling & Viability Study	Developed a preliminary financial model covering capital investment estimate, operating cost projections, revenue forecasting, profit margin analysis, ROI computation, and payback period assessment.
Phase 05	Strategic Advisory &	Provided strategic guidance on project execution, including

Implementation Planning

plant setup framework, procurement strategy, regulatory compliance roadmap, and long-term operational scaling.

Scope of Services Delivered

NPCS delivered a comprehensive suite of consulting services across the full project evaluation lifecycle. Each service component was designed to provide the client with actionable intelligence and investment clarity:

01	Project Identification & Sector Screening	Systematic evaluation of multiple industrial sectors to identify the most viable and profitable manufacturing opportunity.
02	Market Potential & Demand Assessment	Detailed analysis of global and regional market demand, industry trends, and growth drivers for low toxicity base oils.
03	Raw Material Availability Study	Assessment of kerosene supply chain, availability of petroleum feedstocks in Saudi Arabia, and procurement landscape.
04	Technical Feasibility & Process Overview	Evaluation of manufacturing technology, processing requirements, plant capacity options, and operational parameters.
05	Plant Layout & Machinery Planning	Guidance on plant design, production line configuration, and equipment/machinery selection for the proposed manufacturing facility.
06	Project Cost Estimation	Preliminary estimation of total plant setup cost, including land, civil works, machinery, utilities, and working capital requirements.
07	Financial Viability Analysis	Computation of expected profitability, ROI, IRR, payback period, and break-even analysis to establish investment confidence.
08	Implementation Roadmap & Advisory	End-to-end guidance on project execution milestones, regulatory compliance, and operational setup framework.

Project Execution & Timeline

The consulting engagement was executed in a phased manner over 12 weeks, ensuring structured delivery of insights and providing the client with progressive clarity at each stage of the evaluation:

Timeline	Milestone	Description	Status
Week 1–2	Initial Consultation & Requirement Gathering	Understanding client's investment goals, budget parameters, regional constraints, and sector preferences.	Complete
Week 3–4	Sector Screening & Project Identification	Evaluating multiple industrial ventures within petroleum derivatives; shortlisting best-fit opportunity.	Complete
Week 5–6	Market Research & Demand Analysis	Deep-dive into global and regional demand landscape for low toxicity base oils.	Complete
Week 7–8	Technical Feasibility Assessment	Review of manufacturing technologies, process design, plant requirements, and utilities.	Complete
Week 9–10	Financial Modeling & Viability Study	Cost estimation, revenue projections, ROI/IRR analysis, and investment risk assessment.	Complete
Week 11–12	Advisory Report Delivery & Client Review	Delivery of comprehensive feasibility insights; client review and evaluation of recommendations.	Complete
Post-Delivery	Implementation Planning Support	Ongoing strategic support as client progresses into the project planning and execution phase.	In Progress

Technical Insights: Manufacturing of Low Toxicity Base Oil

NPCS evaluated the complete technical landscape for manufacturing low toxicity base oil from kerosene — a process that involves converting petroleum fractions into high-value, low-aromatic specialty oils through advanced refining technologies.

What is Low Toxicity Base Oil?

Low toxicity base oils are refined petroleum derivatives characterized by low aromatic content, minimal sulfur compounds, and reduced toxicity profiles. They are produced through carefully controlled refining and purification processes that selectively remove harmful compounds while preserving the valuable lubricating and processing properties of the base oil.

Manufacturing Process Overview

- Step 1 — Feedstock Preparation: Kerosene fractions are received, tested, and pre-treated to remove water, particulates, and light volatile compounds.
- Step 2 — Hydrotreatment / Solvent Extraction: The feedstock undergoes catalytic hydrotreatment or solvent extraction to remove aromatic compounds, nitrogen, sulfur, and oxygen impurities.
- Step 3 — Dewaxing: Wax compounds are removed to ensure the base oil maintains fluidity and low pour point characteristics across temperature ranges.
- Step 4 — Purification & Finishing: The product is passed through filtration and finishing treatments to achieve target viscosity, color, and purity specifications.
- Step 5 — Quality Testing & Grading: Final product undergoes rigorous quality control testing against international standards (ISO, ASTM) for aromatic content, flash point, viscosity, and toxicity.
- Step 6 — Packaging & Dispatch: Certified product is packaged in bulk or drums for industrial distribution and export.

Key End-Use Applications

- Metalworking fluids and cutting oils
- Industrial lubricants and process oils
- Pharmaceutical and cosmetic grade processing oils
- Food-grade machinery lubricants
- Specialty formulations for automotive and engineering applications

Financial & Market Analysis

Investment & Financial Outlook

Based on NPC's preliminary techno-economic assessment, the following financial parameters were established for the proposed manufacturing venture:

Total Capital Investment (Estimated)	Moderate — aligned with mid-scale manufacturing facility
Plant & Machinery	Key component of CAPEX — advanced kerosene treatment systems
Working Capital Requirement	Covered for first operational cycle with buffer
Expected Gross Margin	Strong positive margin on specialty oil output
Return on Investment (ROI)	Attractive — target achievable within 3–5 year horizon
Internal Rate of Return (IRR)	Projected to exceed standard industrial benchmarks
Payback Period	Estimated within 4–6 years under normal operational conditions
Break-even Capacity Utilization	Achievable at moderate plant utilization levels

Market Demand & Growth Outlook

The global market for low toxicity base oils is experiencing sustained growth, driven by a convergence of regulatory, environmental, and industrial demand factors:

- **Regulatory Pressure:** Tightening environmental and occupational health regulations globally are driving rapid replacement of high-aromatic industrial oils with low toxicity alternatives.
- **Manufacturing Sector Growth:** Expanding metalworking, automotive, and precision engineering industries in Asia, Africa, and Europe are driving consistent demand for specialty process oils.
- **Pharmaceutical & Cosmetic Demand:** Growing production of pharmaceutical and personal care products requiring food-grade and cosmetic-grade base oils is creating new demand streams.
- **Saudi Arabia Export Advantage:** With established petroleum infrastructure and competitive feedstock costs, Saudi-produced base oils are well-positioned for export to Asian and African markets.
- **Industrial Diversification (Vision 2030):** Saudi Arabia's commitment to industrial diversification provides policy support, investment incentives, and infrastructure readiness for such ventures.

Results & Outcomes

The NPCCS consulting engagement delivered a set of concrete, measurable outcomes that empowered M/s. Coasts Petroleum Products Co. to move forward with investment confidence:

✓ Optimal Project Identified	Client received a well-researched, data-backed recommendation for a high-potential manufacturing venture.
✓ Market Confidence Established	Comprehensive market analysis confirmed strong and growing global demand for low toxicity base oils.
✓ Technical Clarity Achieved	Client gained clear understanding of the manufacturing process, technology options, and plant requirements.
✓ Financial Viability Confirmed	Preliminary financial model demonstrated attractive ROI, IRR, and payback metrics, supporting investment confidence.
✓ Risk Profile Understood	Key technical, market, and financial risks were identified, quantified, and mitigation strategies outlined.
✓ Implementation Pathway Defined	Client received a structured roadmap to move from feasibility into active project planning and execution.
✓ Strategic Market Positioning	Project aligns with Saudi Arabia's Vision 2030 industrial diversification — giving client a first-mover advantage.

Client Testimonial

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Niir Project Consultancy Services provided us with valuable insights and professional guidance in identifying a promising industrial investment opportunity. Their techno-economic evaluation helped us make an informed decision with confidence. We appreciate the structured approach and expertise NPCCS brought to our project planning process.

— Management Team, M/s. Coasts Petroleum Products Co., Riyadh

Why Choose NPCS

When it comes to industrial project investment, the quality of your advisory partner determines the quality of your outcomes. NPCS is the partner of choice for thousands of investors globally — and here's why:

<input type="checkbox"/> Proven Industrial Expertise	Over 30 years of dedicated industrial consultancy experience spanning 85 countries, 150K+ clients, and thousands of manufacturing sectors.
<input type="checkbox"/> Global Market Intelligence	Deep understanding of international market dynamics, regional demand patterns, and cross-border trade opportunities.
<input type="checkbox"/> Data-Driven Feasibility	All project recommendations are grounded in rigorous data analysis — no guesswork, no bias, only evidence-based insights.
<input type="checkbox"/> End-to-End Project Support	From project identification to implementation planning — NPCS remains a committed partner throughout your industrial journey.
<input type="checkbox"/> Risk Mitigation Focus	Our feasibility methodology is designed to surface and quantify risks early, enabling informed decisions and reduced exposure.
<input type="checkbox"/> Unmatched Knowledge Base	Access to 150k+ detailed project reports and 150K+ successful industrial projects — the deepest repository in Asia.

Conclusion

The M/s. Coasts Petroleum Products Co. engagement is a powerful example of how structured, expert-led industrial consulting can transform investment uncertainty into confident project planning.

By delivering a rigorous techno-economic feasibility study — grounded in real market data, technical assessment, and financial modeling — NPCS enabled the client to identify, validate, and proceed with a high-potential manufacturing venture in the specialty petroleum derivatives space.

The recommended project — Manufacturing of Low Toxicity Base Oil from Kerosene — aligns perfectly with Saudi Arabia's industrial strengths, global market demand trends, and the client's long-term strategic objectives. With NPCS guidance, the client now has a clear, actionable pathway to build a sustainable and profitable manufacturing business.

At NPCS, we don't just deliver reports — we deliver investment confidence.

Call to Action

READY TO BUILD YOUR NEXT INDUSTRIAL PROJECT?

Partner with Niir Project Consultancy Services (NPCS) to transform your investment idea into a profitable industrial venture.

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