

CLIENT SUCCESS CASE STUDY

Manufacturing of PP Woven Cement Sacks

From Feasibility to Factory Floor — Nigeria's Next Industrial Success Story

CLIENT

M/s. Whitewood Nigeria Limited

Nicon Town Estate, Lekki, Lagos, Nigeria

Industry: Large-Scale Investment — Packaging & Manufacturing

ABOUT NIIR PROJECT CONSULTANCY SERVICES (NPCS)

Who We Are

Niir Project Consultancy Services (NPCS) is one of Asia's most trusted industrial consultancy organisations, delivering world-class techno-economic feasibility studies, bankable project reports, and comprehensive market research across 50+ countries.

NPCS is part of Asia's leading industrial knowledge ecosystem with thousands of project profiles and global consulting expertise — empowering entrepreneurs, MSMEs, corporations, and governments to make informed investment decisions.

Core Services

- ▶ Detailed Project Reports (DPR)
- ▶ Techno-Economic Feasibility Studies
- ▶ Market Research & Demand Analysis
- ▶ Engineering Advisory & Process Design
- ▶ Financial Modelling & Investment Analysis
- ▶ Implementation Planning & Regulatory Guidance

30,000+

Project Reports Published

50+

Countries Served

30+

Years of Expertise

250,000+

Industrial Projects Delivered

PROJECT SNAPSHOT

Parameter	Details
Client Name	M/s. Whitewood Nigeria Limited
Location	Nicon Town Estate, Lekki, Nigeria
Industry	Large-Scale Investment — Packaging & Manufacturing
Project Recommended by NPCS	Manufacturing Unit for Polypropylene (PP) Woven Cement Sacks
Consultancy Provided by NPCS	Techno-Economic Feasibility, Market Analysis, Raw-Material Sourcing, Cost & Financial Analysis, Implementation Planning
Implementation Status	Feasibility Study Completed — Client Proceeding to Implementation

CLIENT OVERVIEW & INVESTMENT OBJECTIVE

M/s. Whitewood Nigeria Limited, based in Nicon Town Estate, Lekki, Lagos, is a growth-oriented enterprise seeking to diversify into the manufacturing sector. The client's primary objective was to identify a viable, long-term manufacturing opportunity that would deliver sustainable profitability, leverage available regional resources, and support Nigeria's industrial development agenda.

The client engaged NPCS to conduct an independent, data-driven feasibility assessment and provide strategic recommendations — spanning project identification, market analysis, technical evaluation, financial modelling, and implementation planning.

Client's Strategic Goals

- ▶ Diversify revenue streams through domestic manufacturing
- ▶ Invest in a sector with strong, growing local demand
- ▶ Leverage Nigeria's improving industrial supply chain
- ▶ Achieve import substitution and export potential
- ▶ Ensure long-term operational sustainability and profitability

PROBLEM STATEMENT & MARKET CHALLENGES

<p>Key Challenges Identified</p> <ul style="list-style-type: none"> ▶ Nigeria imports 90%+ of its polypropylene requirements, creating vulnerability to forex fluctuations and supply disruptions.Market Gap: ▶ Reliance on imported PP resin exposed manufacturers to price volatility and shipping delays.Supply Chain Risk: ▶ The Nigeria cement sacks import market grew at a 19.25% CAGR (2020–2024), highlighting a critical domestic production gap.Unmet Local Demand: ▶ Industrial manufacturing requires careful capital allocation to balance infrastructure, machinery, and working capital needs.Capital Structuring: ▶ Establishing a manufacturing unit in Nigeria requires compliance with environmental, industrial, and trade 	<p>Macro Context</p> <p>Nigeria's economy is undergoing rapid industrialisation, driven by:</p> <ul style="list-style-type: none"> ▶ Accelerating infrastructure and construction projects ▶ Rising urbanisation and housing demand ▶ Government push for import substitution in key sectors ▶ Commissioning of the Dangote Petrochemical Plant in Lagos — Africa's largest polypropylene p <div style="border: 1px solid black; padding: 10px; margin-top: 20px;"> <p>Market Insight</p> <p>The global PP woven bags market, valued at USD 3.3 billion in 2026, is projected to reach USD 4.7 billion by 2030, growing at a CAGR of 3.93%.</p> </div>
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OUR APPROACH & CONSULTING METHODOLOGY

NPCS deployed its proven six-phase consulting framework — combining rigorous data analysis, technical expertise, and financial precision — to deliver a comprehensive feasibility roadmap for Whitewood Nigeria Limited.



<p>Phase 1 — Opportunity Identification</p> <p>NPCS conducted macroeconomic research across Nigeria's manufacturing landscape, assessed packaging import data, and evaluated supply-demand dynamics to shortlist high-growth segments. PP woven cement sacks emerged as the strongest opportunity.</p> <p>Phase 2 — Market Potential Assessment</p> <p>Global and local market data were analysed in depth. NPCS benchmarked demand trajectories, competitor presence, and market share potential for a new entrant targeting Nigeria's construction and cement industries.</p>	<p>Phase 3 — Technical Feasibility</p> <p>The manufacturing process was mapped end-to-end — from PP tape extrusion and circular weaving, through lamination, printing, and sewing — with machinery specifications and layout recommendations tailored to the client's target capacity.</p> <p>Phase 4 — Financial Modelling</p> <p>NPCS built comprehensive financial models covering capital expenditure, operating costs, cash flow projections, break-even analysis, IRR, and ROI — tested across multiple capacity utilisation scenarios.</p>
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<p>Phase 5 — Risk Assessment Phase 6 — Implementation Planning</p> <p>NPCS prepared sensitivity analyses to evaluate profitability under varying raw-material prices, forex conditions, and demand scenarios. A phased implementation timeline was developed — covering land acquisition, construction, machinery procurement, regulatory compliance, commissioning, and market entry — ensuring the client could proceed with clarity and confidence.</p>

SCOPE OF SERVICES DELIVERED

<p>Consulting Deliverables</p> <ul style="list-style-type: none">✓ Detailed Project Report (DPR)✓ Plant Layout & Process Flow Design✓ Machinery Selection & Vendor Advisory✓ Raw Material Sourcing Strategy✓ Financial Modelling & Investment Analysis✓ Market Validation & Demand Forecasting✓ Phased Implementation Roadmap✓ Regulatory Compliance & Quality Framework✓ Long-term Strategic Growth Advisory	<p>Why PP Woven Cement Sacks?</p> <p>After evaluating multiple manufacturing options across Nigeria's industrial landscape, NPCS identified PP woven cement sacks as the optimal investment for Whitewood based on five key factors:</p> <ul style="list-style-type: none">▶ Raw Material Availability — Dangote Petrochemical Plant now produces PP locally▶ Strong Market Demand — 19.25% CAGR in Nigeria cement sack imports (2020–2024)▶ Manageable Investment — Total project cost ~US \$1.1 million▶ Proven Technology — Established, scalable manufacturing process▶ Environmental Advantage — Reusable and recyclable product
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TECHNICAL INSIGHTS — MANUFACTURING PROCESS

The PP woven cement sack manufacturing process is a well-established, multi-stage industrial operation. NPCS outlined the complete production flow and specified key machinery for each stage:



<p>Process Overview</p> <p>Stage 1 — PP Extrusion: Polypropylene granules are melted and extruded into flat tapes using high-speed extruders.</p> <p>Stage 2 — Tape Drawing: Tapes are stretched and heat-set to achieve optimal tensile strength and flexibility.</p> <p>Stage 3 — Circular Weaving: Warp and weft tapes are interlaced on circular looms to form tubular woven fabric.</p> <p>Stage 4 — Lamination: The fabric is</p>	<p>Key Machinery & Equipment</p> <ul style="list-style-type: none"> ▶ High-speed PP tape extruders (multi-line) ▶ Circular looms (80–100 looms per shift) ▶ Lamination lines with inline extrusion coating ▶ Multicolour gravure/flexographic printing units ▶ Automatic bag cutting and stitching machines ▶ Valve bag conversion machines ▶ Quality control and inspection systems <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Production Capacity Designed plant capacity: 10 million bags per day — scalable to meet growing regional demand across West Africa.</p> </div>
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coated with a BOPP or PP film layer for moisture resistance.

**Stage 5 —
Printing &
Cutting:**

Gravure or flexo printing is applied; fabric is cut to size for bag conversion.

**Stage 6 —
Valve Sewing
& Finishing:**

Valve mouths are sewn and finished for airtight filling of cement and construction materials.

FINANCIAL & MARKET ANALYSIS

Investment Breakdown

Cost Component	Estimated Amount	Description
Land & Building	₹3.18 Crore (~US \$370,000)	Infrastructure & Civil
Plant & Machinery	₹4.15 Crore (~US \$480,000)	Core Production Equipment
Working Capital	₹1.74 Crore (~US \$200,000)	Operational Reserves
Total Investment	₹9.37 Crore (~US \$1.1 Million)	Complete Project Cost

Key Financial Metrics

~16% Rate of Return At 70% utilisation	~66% Break-Even Point Capacity utilisation	4–5 Years Payback Period Estimated timeline	~\$1.1M Total Investment All-in project cost
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Market Demand Analysis

<p>Nigeria Cement Sack CAGR (2020–2024): 19.25%</p> <p>Global PP Woven Bags Market (2026): USD 3.3 Billion</p> <p>Projected Global Market (2035): USD 4.7 Billion</p> <p>Global Market CAGR: 3.93%</p> <p>Global Shipments (2024): 120+ Billion units</p> <p>Construction Sector Share: 25% of global demand</p>	<p>Import Substitution Opportunity</p> <p>Nigeria imported approximately 250,000 metric tonnes of polypropylene annually — mostly from overseas. The Dangote Petrochemical Plant (commissioned March 2025) has a combined polypropylene capacity of 830,000 MT/year across two units.</p> <p>This transformational shift in raw-material availability directly reduces foreign-exchange risk and creates a cost advantage for local PP manufacturers — positioning Whitewood Nigeria Limited at the forefront of this industrial transition.</p>
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RESULTS & OUTCOMES

<p>Business Impact for Whitewood</p> <ul style="list-style-type: none"> ▶ Domestic production replaces costly imported sacks, reducing per-unit costs significantly. Import Substitution: ▶ First-mover advantage in an underserved local PP sack manufacturing segment. Market Positioning: ▶ Ability to serve cement, agriculture, fertiliser, and chemicals sectors beyond construction. Revenue Diversification: ▶ West African markets identified as viable export destinations once domestic supply is established. Export Potential: ▶ Improved local PP supply chain reduces exposure to forex volatility and import disruptions. Risk Mitigation: 	<p>Strategic Outcomes</p> <ul style="list-style-type: none"> ▶ Feasibility study completed with investment confidence established ▶ Plant design and machinery specifications finalised ▶ Raw-material supply secured via Dangote Petrochemical partnership ▶ Land procurement and regulatory approvals initiated ▶ Production expected to commence within 12–18 months ▶ Target: supply major Nigerian cement manufacturers at launch ▶ Phase 2: Explore West African export markets within 3 years <div data-bbox="516 701 1622 848" style="border: 1px solid black; background-color: #e6f2ff; padding: 10px;"> <p>Client Decision After reviewing NPC's comprehensive feasibility study, Whitewood Nigeria Limited formally decided to proceed with implementation — a testament to the quality and confidence-building power of NPC's analysis.</p> </div>
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CLIENT TESTIMONIAL

“NPCS gave us a clear roadmap from concept to implementation. Their analysis of market demand, raw-material sourcing, and financial viability gave us the confidence to invest in polypropylene woven cement sacks. We appreciate their comprehensive feasibility report and strategic guidance, which have set the foundation for a sustainable manufacturing business.”

— Managing Director, M/s. Whitewood Nigeria Limited

WHY CHOOSE NPCS

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| <ul style="list-style-type: none"> ▶ 30+ years delivering feasibility studies across 50+ countries and 250,000+ projects. Proven Industrial Expertise: ▶ Access to proprietary databases covering thousands of industrial sectors and product categories. Global Market Intelligence: ▶ Rigorous quantitative modelling — market sizing, financial projections, and sensitivity analysis. Data-Driven Feasibility: | <ul style="list-style-type: none"> ▶ From concept identification through market entry — a complete advisory partnership. End-to-End Project Support: ▶ Multi-scenario analysis ensures investment decisions are stress-tested and resilient. Risk Mitigation Approach: ▶ NPCS reports are trusted by banks, financial institutions, and investors for project financing. Bankable Reports: |
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CONCLUSION

This case study demonstrates NPCS's ability to identify, validate, and de-risk high-value manufacturing opportunities. By combining rigorous market analysis, technical due diligence, and robust financial modelling, NPCS delivered a feasibility framework that gave Whitewood Nigeria Limited the confidence to commit to a significant industrial investment.

The manufacturing of PP woven cement sacks in Nigeria represents a convergence of favourable market dynamics: growing domestic demand, improved local raw-material supply, moderate capital requirements, and strong return potential. NPCS's structured consulting approach enabled the client to navigate these dynamics with precision — from concept to implementation blueprint.

As Nigeria's industrial economy continues to expand, projects like this — backed by rigorous consulting intelligence — will play a pivotal role in building sustainable, import-substituting manufacturing capacity. NPCS remains committed to being the trusted partner in this industrial journey.

READY TO BUILD YOUR NEXT INDUSTRIAL PROJECT?

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

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