

EASTERN INTERNATIONAL UNIVERSITY

BECAMEX BUSINESS SCHOOL



GROUP PROJECT - Fine Scandinavia Co. Ltd

Launching a New Kitchenware & Home-Appliance Line in Dat Cuoc, Vietnam

Course: SCLM 479 - Integrated Supply & Logistics Management

Lecturer: Mr. Lê Hoàng Hải

Prepared by: Group Panda

Team members

Đoàn Tuấn Anh	2032300005
Nguyễn Hồ Hoàng Yến	1932300502
Đinh Nho Thanh Bình	2132300011
Nguyễn Đỗ Xuân Ái	2332300353

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I. Introduction

Established in 2015 and headquartered in Binh Duong, Vietnam, Fine Scandinavia Co., Ltd. has distinguished itself as a dynamic enterprise deeply rooted in the Scandinavian design philosophy of simplicity, functionality, and sustainability. The company operates on a unique dual business model, functioning as both a vertically integrated manufacturer for global export and a specialized distributor for the domestic market. On one hand, it designs, manufactures, and exports high-quality wooden and upholstered furniture to international B2B clients, particularly in Europe and North America, also offering OEM services. Concurrently, it serves the Vietnamese market as a trusted distributor of premium Nordic lifestyle products, including imported kitchen appliances, tableware, and home decor from leading brands in Denmark, Sweden, and Finland. Building on this distribution expertise, Fine Scandinavia is now strategically focused on introducing a new line of premium Nordic kitchenware into Vietnam, a project that presents significant supply chain and business challenges related to import logistics, demand forecasting, regulatory compliance, and competitive brand positioning. This report will provide a comprehensive analysis of these challenges to propose strategic solutions for a successful and profitable market expansion.

In 2025, the small kitchen appliances segment in Europe is valued at US\$20.49 billion, with an expected annual growth rate of 4.24% through 2030 (*Household Appliances Market in Europe 2025-2033 Overview: Trends, Competitor Dynamics, and Opportunities*, 2024). Overall household appliances are projected to reach US\$105.96 billion in revenue this year, growing at 4.10% CAGR (Singh & Singh, 2025). Key trends include a shift toward energy-conserving devices, smart technology integration (with a 15.2% CAGR for smart kitchen appliances), and durable, non-toxic materials amid post-pandemic home cooking surges (Statista, n.d.). These five products align well with these trends, offering durability, convenience, health benefits, and versatility, making them strong candidates for production and sale in Europe.

Three-Layer Stainless Steel Pot Set

The stainless steel cookware market in Europe is projected to reach US\$3,518.7 million by 2030, growing at a 5.6% CAGR from current levels. Europe holds over 29% of the global market share, driven by culinary traditions in France, Italy, and Germany (*European Kitchen Appliances Market - Size, Share & Industry Analysis*, 2025). Three-layer variants are specifically rising in popularity for their durability and appeal in both Europe and the US, with consumer discussions

highlighting preferences for European brands like De Buyer. The broader pots and pans market for residential use is expected to surpass US\$2,676.8 million by 2032 at a 6.5% CAGR (*Enameled Cookware Market Size, Demand & Trends 2024-2034*, 2024).

Hard Anodized Non-Stick Pan

The non-stick cookware market in Europe is set to grow at a 4.7% CAGR from 2024 to 2030, fueled by changing eating habits and demand for easy-to-use pans (Verified Market Research, 2025). Europe dominates globally with a 37.8% share, valued at US\$7.4 billion (*Europe Major Home Appliances Market - Size, Share & Industry Trends Analysis*, 2025). Hard anodized types are part of the broader cookware surge, with the European market reaching US\$7.59 billion in 2025 and growing at 4.89% CAGR to US\$9.64 billion by 2030 (Expert Market Research, 2025). Consumer feedback emphasizes durability, with searches for reliable options like Alu Pro 5 in Europe.

Smart Multi-Function Pot/Pressure Rice Cooker (5 Liters)

Demand for multi-function pressure cookers is rising due to convenience for busy lifestyles, with the European aluminium pressure cooker market growing steadily. The smart electric pressure cooker segment is valued at US\$1.5 billion in 2024, projected to reach US\$3.5 billion by 2033 (Verified Market Reports, 2025). Broader pressure cooker sales in Europe show a 3.5% CAGR, while multicookers are expected to hit US\$59.8 billion globally by 2031, with strong European adoption (Verified Market Research, n.d.). Intelligent multi-function cookers are forecasted at US\$4.5 billion globally in 2023, with Europe contributing significantly due to demand for time-saving appliances (Statista, 2023).

Multi-Temperature Electric Kettle (1.7 Liters)

The electric kettle market in Europe is growing at a 3.6% CAGR through 2030, driven by convenience and energy efficiency (KBV Research, 2023). The global electric kettle market is experiencing steady growth, with a projected market size of \$4.75 billion in 2025 and a forecasted CAGR of 5.00% from 2025 to 2030 (Future Market Insights, 2025). The Europe Electric Kettle Market would witness market growth of 3.6% CAGR during the forecast period (2023-2030), with demand for portable and multi-temp models (KBV Research, 2023). Overall, the segment is set to grow from US\$4.38 billion in 2024 to US\$4.56 billion in 2025.

Air Fryer/Turbo Convection Oven (5 Liters)

The air fryer market in Europe is valued at US\$1.71 billion in 2025, with an 8.39% CAGR through 2030—the highest among these products (Statista, 2025). Sales volume reached 2,259.13 thousand units in 2021, growing 23.6% from 2020-2024, with popularity in supermarkets for air-fryer-specific foods (KBV Research, 2024). The market is projected to reach 3,890.19 thousand units by 2032 at 5.40% CAGR, led by Western Europe (Verified Market Research, 2025). Drawer-style models (similar to turbo convection) are growing at 8.2% CAGR through 2029 (Technavio, 2024).

II. Demand Planning

Demand planning is a critical process for forecasting customer demand for Fine Scandinavia's products, thereby providing a foundation for production scheduling, inventory management, and supply chain planning. The company's demand planning strategy for its European market entry is designed to align production capacity with projected demand across five core product categories, while simultaneously minimizing inventory costs and maintaining high service levels. This approach ensures that demand planning is directly linked to production scheduling, procurement, and logistics execution, supporting both the domestic seven-day delivery target and efficient export operations to the EU.

1. Forecasting Methodology and Foundational Data

To overcome the lack of historical sales data, a hybrid forecasting approach will be adopted. The foundational market data for 2024 was compiled and synthesized from authoritative industry reports by Mordor Intelligence, specifically the "Europe Cookware Market Report" and the "Europe Small Kitchen Appliances Market Report." These sources provide credible estimates for market value, sales volume, and the projected Compound Annual Growth Rate (CAGR), which form the basis of our initial forecast, as presented in Table 3.1.

Table 3.1: Market Analysis and Growth Projections (2024 Baseline)

Product Category	Estimated Europe Market Value (2024)	Products (Volume in 2024)	Weighted in 2024	CAGR
Tri-ply stainless-steel Cookware Set	\$507.8 million	1,692,667	10.47%	6.50%

Non-stick Hard-anodized Fry-pan	\$511.1 million	8,518,333	52.68%	5.60%
Smart Multi-cooker / Rice-Pressure Cooker (5 L)	\$415.0 million	2,766,667	17.11%	13.40%
Variable-temperature Electric Kettle (1.7 L)	\$198.4 million	2,834,286	17.53%	3.60%
Air-fryer / turbo-convection oven (5 L)	\$136.5 million	359,211	2.22%	9.11%
Total	\$1,768.8 million	16,171,164	100.00%	

In selecting the forecasting methodology, several models were considered. Moving Average models, while simple, were deemed too slow to react to trends in a volatile new market. Exponential Smoothing offers more responsiveness by weighting recent data more heavily, making it a viable candidate for early-stage tracking. Causal Models, which link demand to drivers like promotional spending, offer the highest potential accuracy but require substantial historical data that is not yet available.

Therefore, a hybrid strategy was selected as the most appropriate. For the initial 5-year strategic plan, a CAGR projection combined with seasonal indices provides a robust, market-based foundation. For tactical, month-to-month forecasting within the S&OP process, Exponential Smoothing will be initially employed. As sufficient sales data (24+ months) becomes available, the company will transition toward implementing Causal Models to achieve higher forecast accuracy.

2. Annual Demand Forecast (2026-2030): A Phased Market Penetration and Capacity Ramp-Up

The annual total production volumes are not arbitrary; they represent a deliberate, phased market penetration strategy that is directly aligned with the planned capacity ramp-up of the new Dat Cuoc facility (2 million units/year with 2 shifts, scalable to 3 million with a third shift).

- 2026 (Launch Year): 600,000 units. This conservative initial volume reflects a prudent ramp-up phase, as commercial launch is scheduled for Q4 2026.

- 2027: 1,500,000 units. This signifies the first full year of two-shift operations, targeting 75% of the initial planned capacity. Achieving this level is critical for reaching cash-flow breakeven and establishing market presence.
- 2028: 2,500,000 units. This target necessitates the introduction of a third production shift, scaling operations beyond the initial 2-million-unit capacity to meet accelerating demand.
- 2029 & 2030: 2,800,000 and 3,000,000 units. These figures represent the final push toward achieving the factory's full, scalable capacity of 3 million units per year, solidifying Fine Scandinavia's position in the market.

Product Category	Products in 2025	Products in 2026	Products in 2027	Products in 2028	Products in 2029	Products in 2030
Tri-ply Stainless-steel Cookware Set	1,802,690	1,919,865	2,044,656	2,177,559	2,319,100	2,469,842
Non-stick Hard-anodized Fry-pan	8,995,360	9,580,058	10,202,762	10,865,941	11,572,227	12,324,422
Smart Multi-cooker / Rice-Pressure Cooker (5 L)	3,137,400	3,341,331	3,558,518	3,789,822	4,036,160	4,298,510
Variable-temperature Electric Kettle (1.7 L)	2,936,320	3,127,181	3,330,448	3,546,927	3,777,477	4,023,013
Air-fryer / Turbo-convection Oven (5 L)	391,935	417,411	444,543	473,438	504,211	536,985
Total Estimated Market Value for These 5 Segments	17,263,706	18,385,847	19,580,927	20,853,687	22,209,177	23,652,773

3. Seasonal Decomposition and Monthly Forecast Logic

- **Seasonality Analysis:** The European kitchenware market exhibits a distinct seasonal pattern. The fourth quarter is the peak season, typically accounting for 35-45% of annual sales, driven by holiday gift-giving and increased home cooking. Conversely, the first quarter is the softest period due to post-holiday spending slowdowns.
- **Monthly Allocation Logic:** To decompose the annual targets into actionable monthly forecasts, a Seasonal Index methodology is applied. This index quantifies the expected demand for a given month relative to the monthly average

Table 3.2: Illustrative Seasonal Index Framework

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2026	-	-	-	-	-	-	-	-	-	25%	35%	40%
2027	5%	5%	7%	7%	5%	7%	7%	10%	10%	7%	15%	15%
2028	6%	7%	7%	6%	7%	7%	7%	7%	6%	10%	12%	18%
2029	6%	7%	7%	6%	7%	7%	7%	7%	6%	10%	12%	18%
2030	6%	7%	7%	6%	7%	7%	7%	7%	6%	10%	12%	18%

The monthly forecast is calculated as:

$$\text{Monthly Forecast} = (\text{Total Annual Demand} / 12) * \text{Monthly Seasonal Index}$$

This logic ensures that production and inventory are strategically built up in Q2 and Q3 in anticipation of the Q4 peak. The resulting annual demand totals for the planning horizon are shown in Table 3.3.

Table 3.3: Detailed Monthly Demand Plan (2026-2030, units)

Time	Tri-ply stainless steel cookware set	Non-stick hard anodized fry-pan	Smart multi cooker (5 L)	Variable temperature electric kettle (1.7 L)	Air-fryer / turbo oven (5 L)	Total Annual
Total 2026	62,652	312,634	109,040	102,052	13,622	600,000
Total 2027	156,631	781,584	272,601	255,129	34,054	1,500,000
Total 2028	261,052	1,302,640	454,335	425,216	56,757	2,500,000
Total 2029	292,378	1,458,957	508,855	476,242	63,568	2,800,000

Total 2030	313,262	1,563,168	545,202	510,259	68,109	3,000,000
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Note: For brevity, only annual totals are displayed. A detailed monthly breakdown is available in the appendix.

To support seasonal peaks, the company will increase factory capacity allocation and position higher stock levels in European distribution centers to ensure timely replenishment and avoid stockouts.

4. Planning Process (S&OP) and Key Performance Indicators (KPIs)

A monthly Sales & Operations Planning (S&OP) cycle will be established to create a consensus forecast across departments. The following KPIs will be tracked to measure performance:

- Forecast Accuracy: Measured by Mean Absolute Percentage Error (MAPE). Target: $MAPE < 20\%$.
- Forecast Bias: Tracks the tendency to over- or under-forecast. Target: Bias within $\pm 5\%$.

5. Risk Management in Demand Planning

Given the volatility of global markets, potential risks have been identified, including demand overestimation or underestimation, regulatory changes, and supply chain disruptions.

Mitigation strategies include:

- Implementing rolling forecasts for frequent plan updates.
- Maintaining safety stock buffers for critical products.
- Diversifying sourcing to reduce dependency on single suppliers.

This integrated approach ensures that demand planning is not only accurate but also adaptable to unforeseen market shifts, supporting sustainable growth in the European market.

IV. Supply Planning

1. Objective

Design a 5-year Master Production Schedule (2026–2030) for Fine Scandinavia’s Dat Cuoc plant, ensuring market demand is met while optimizing capacity utilization and maintaining flexibility to adjust for $\pm 20\%$ demand volatility.

2. Data Sources & Assumptions

- Products Covered:
 1. Tri-ply stainless-steel cookware set
 2. Non-stick hard-anodized fry-pan
 3. Smart multi-cooker / rice-pressure cooker (5 L)
 4. Variable-temperature electric kettle (1.7 L)
 5. Air-fryer / turbo convection oven (5 L)
- Unit of Measure: Units produced per year.
- Capacity Baseline: 2M units/year (2 shifts); expandable to 3M units/year (3 shifts)
- Methodology: Monthly Production Quantity = Forecasted Demand + Safety Stock – Beginning Inventory. Annual totals derived from summing monthly production quantities.

3. Annual Output by Product

Product	2026	2027	2028	2029	2030
Tri-ply stainless-steel cookware set	100,244	338,323	514,899	572,853	523,148
Non-stick hard-anodized fry-pan	500,214	932,690	1,343,283	1,486,052	1,156,745
Smart multi-cooker / rice-pressure cooker (5 L)	174,465	324,081	468,510	518,305	403,449
Variable-temperature electric kettle (1.7 L)	174,465	324,081	468,510	518,305	403,449
Air-fryer / turbo convection oven (5 L)	21,795	40,638	58,528	64,748	50,400

Total Plant Output:

Year	Total Units	% of 2M Cap	Over Capacity?
2026	971,183	48.6%	No
2027	1,959,813	98.0%	No
2028	2,853,730	142.7%	Yes
2029	3,160,263	158.0%	Yes

2030	2,537,191	126.8%	Yes
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4. Demand Trends Analysis

- 2026: Ramp-up year; capacity underutilized, allowing trial runs and process stabilization.
- 2027: Nearly at full 2-shift capacity; requires tight maintenance scheduling.
- 2028–2029: Strong demand growth, exceeding 3M units in 2029; necessitates full 3-shift operation and possibly subcontracting.
- 2030: Slight demand drop but still above 2M, requiring partial 3-shift operations.

5. Capacity Allocation by Product

- High-volume leader: Non-stick Fry-pan (~46–47% of total) — critical to throughput and revenue.
- Mid-volume contributors: Tri-ply cookware, Multi-cooker, Electric kettle (~15–20% each).
- Low-volume niche: Air-fryer — small share but fastest growth rate.

6. ±20% Demand Scenarios & Implications

Baseline capacity: 2M/year (2 shifts), expandable to 3M/year (3 shifts).

+20% Demand:

2026: 1,165,420 units – 2 shifts

2027: 2,351,776 units – Partial 3rd shift

2028–2030: >3M units – Full 3rd shift + outsourcing/pre-build

-20% Demand:

2026: 776,946 units – Excess capacity

2027: 1,567,650 units – 2 shifts

2028–2029: >2M units – Partial 3rd shift

2030: ~2M units – Flexible 2–3 shifts

7. Operational Playbook

7.1 If Demand +20%:

- Phase in 3rd shift, selective pre-build, SMED to cut changeovers <45 mins.
- Time-phased procurement, dual-source critical parts, air freight buffer.
- Prioritize Non-stick Fry-pan, subcontract processes, agile workforce.

- MPS time-fence (4–6 weeks), capacity buffer at bottlenecks.

7.2 If Demand -20%:

- Default to 2 shifts, postponement strategy.
- Lower FG days-on-hand, smaller lot sizes, flexible supplier terms.
- Focus on fast-movers, seasonal promotions.
- Preventive maintenance, cross-training.

7.3 Implementation Roadmap:

0–4 Weeks: Apply time-fence, confirm shifts, supplier flexibility.

1–3 Months: Deploy SMED, dual-sourcing, subcontract processes.

6–12 Months: Automate packaging, institutionalize postponement, improve layout.

V. Purchasing

1. BOM

Table 5.1: Bills of Materials – Smart Multi-Cooker / Rice-Pressure Cooker (5 L)

Product Type	Component Code	Component Name	Quantity per Unit
Smart Multi-Cooker	MC-001	Outer stainless steel shell	1
Smart Multi-Cooker	MC-002	Plastic top cover (ABS, heat-resistant)	1
Smart Multi-Cooker	MC-003	Plastic bottom base (PP)	1
Smart Multi-Cooker	MC-004	Inner pot (aluminum + non-stick coating)	1

Smart Multi-Cooker	MC-005	Heating plate (resistance coil)	1
Smart Multi-Cooker	MC-006	Thermal sensor (NTC)	1
Smart Multi-Cooker	MC-007	Pressure lid stainless steel frame	1
Smart Multi-Cooker	MC-008	Silicone sealing ring	1
Smart Multi-Cooker	MC-009	Pressure release valve assembly	1
Smart Multi-Cooker	MC-010	Safety lock mechanism	1
Smart Multi-Cooker	MC-011	Control PCB (main board)	1
Smart Multi-Cooker	MC-012	Display module (LCD/LED)	1
Smart Multi-Cooker	MC-013	Button/switch assembly	1
Smart Multi-Cooker	MC-014	Power cord with plug	1

Smart Multi-Cooker	MC-015	Internal wiring harness	1
Smart Multi-Cooker	MC-016	Thermal fuse (safety cutoff)	1
Smart Multi-Cooker	MC-017	Measuring cup (PP plastic)	1
Smart Multi-Cooker	MC-018	Rice paddle (PP plastic)	1
Smart Multi-Cooker	MC-019	Steaming rack (stainless steel)	1
Smart Multi-Cooker	MC-020	Screws (various stainless sizes)	12
Smart Multi-Cooker	MC-021	Rubber feet pads	4
Smart Multi-Cooker	MC-022	User manual	1
Smart Multi-Cooker	MC-023	Packaging carton box	1
Smart Multi-Cooker	MC-024	Foam inserts/protective packaging	2

Table 5.2: Bills of Materials - Tri-Ply Cookware Set

Product Type	Component Code	Component Name	Quantity per Unit
Tri-Ply Cookware Set	CW-001	16 cm saucepan body (tri-ply: 18/10 SS / Al / magnetic SS)	1
Tri-Ply Cookware Set	CW-002	20 cm saucepan body (tri-ply)	1
Tri-Ply Cookware Set	CW-003	24 cm stockpot body (tri-ply)	1
Tri-Ply Cookware Set	CW-004	24 cm sauté pan body (tri-ply)	1
Tri-Ply Cookware Set	CW-005	28 cm fry pan body (tri-ply)	1
Tri-Ply Cookware Set	CW-006	Glass lid 16 cm (tempered) with stainless rim	1
Tri-Ply Cookware Set	CW-007	Glass lid 20 cm (tempered) with stainless rim	1
Tri-Ply Cookware Set	CW-008	Glass lid 24 cm (tempered) with stainless rim	2
Tri-Ply Cookware Set	CW-009	Long handle – stainless cast (for 16/20/24 sauté/28 fry)	4

Tri-Ply Cookware Set	CW-010	Side handle – stainless cast (for stockpot)	2
Tri-Ply Cookware Set	CW-011	Helper side handle – stainless cast (for sauté pan)	1
Tri-Ply Cookware Set	CW-012	Handle rivets – stainless (M5 x 10)	14
Tri-Ply Cookware Set	CW-013	Lid knobs – stainless	4
Tri-Ply Cookware Set	CW-014	Knob screws – stainless	4
Tri-Ply Cookware Set	CW-015	Knob washers – stainless	4
Tri-Ply Cookware Set	CW-016	Exterior polishing compound	1
Tri-Ply Cookware Set	CW-017	Interior passivation/cleaning agent	1
Tri-Ply Cookware Set	CW-018	Silicone bumpers for lid rims	4
Tri-Ply Cookware Set	CW-019	QC sticker set & care card	1

Tri-Ply Cookware Set	CW-020	Gift box with molded pulp inserts	1
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Table 5.3: Bills of Materials - Non-stick Fry-Pan

Product Type	Component Code	Component Name	Quantity per Unit
Non-stick Fry-Pan	FP-001	Aluminum alloy pan body (hard-anodized)	1
Non-stick Fry-Pan	FP-002	Stainless base disc (induction-compatible)	1
Non-stick Fry-Pan	FP-003	Non-stick primer layer (PTFE/ceramic)	1
Non-stick Fry-Pan	FP-004	Non-stick mid-layer (reinforced)	1
Non-stick Fry-Pan	FP-005	Non-stick topcoat	1
Non-stick Fry-Pan	FP-006	Long handle – stainless cast or silicone-overmold	1
Non-stick Fry-Pan	FP-007	Handle rivets – stainless (M5 x 10)	2

Non-stick Fry-Pan	FP-008	Flame guard / silicone spacer	1
Non-stick Fry-Pan	FP-009	Exterior paint/clear-coat (anodize seal)	1
Non-stick Fry-Pan	FP-010	Induction disc adhesive/braze material	1
Non-stick Fry-Pan	FP-011	QC sticker & care card	1
Non-stick Fry-Pan	FP-012	Sleeve/box and cardboard insert	1

Table 5.4: Bills of Materials -Variable-Temp Kettle (1.7L)

Product Type	Component Code	Component Name	Quantity per Unit
Variable-Temp Kettle (1.7L)	EK-001	Kettle body – stainless shell	1
Variable-Temp Kettle (1.7L)	EK-002	Water level window (if applicable) / glass	1
Variable-Temp Kettle (1.7L)	EK-003	Spout mesh filter (stainless)	1

Variable-Temp Kettle (1.7L)	EK-004	Handle assembly (PP or SS + soft-touch)	1
Variable-Temp Kettle (1.7L)	EK-005	Lid assembly with spring hinge	1
Variable-Temp Kettle (1.7L)	EK-006	Heating base with stainless plate	1
Variable-Temp Kettle (1.7L)	EK-007	Thermostat (bimetal) / boil-dry protector	1
Variable-Temp Kettle (1.7L)	EK-008	NTC temperature sensor	1
Variable-Temp Kettle (1.7L)	EK-009	Control PCB (variable temp)	1
Variable-Temp Kettle (1.7L)	EK-010	Display module (LED/LCD) or indicator set	1
Variable-Temp Kettle (1.7L)	EK-011	Power cord & plug (base)	1
Variable-Temp Kettle (1.7L)	EK-012	360° swivel connector set	1
Variable-Temp Kettle (1.7L)	EK-013	Silicone gasket set (lid/body joints)	2

Variable-Temp Kettle (1.7L)	EK-014	Fasteners – screws assort.	10
Variable-Temp Kettle (1.7L)	EK-015	Thermal fuse / over-temp protector	1
Variable-Temp Kettle (1.7L)	EK-016	Decal/printing & QC label	1
Variable-Temp Kettle (1.7L)	EK-017	User manual	1
Variable-Temp Kettle (1.7L)	EK-018	Packaging box & insert	1

Table 5.5: Bills of Materials -Air-Fryer (5L)

Product Type	Component Code	Component Name	Quantity per Unit
Air-Fryer (5L)	AF-001	Outer housing (PP high-temp) main shell	1
Air-Fryer (5L)	AF-002	Top cover / control bezel	1
Air-Fryer (5L)	AF-003	Cooking basket (non-stick coated steel)	1

Air-Fryer (5L)	AF-004	Drawer/pan (non-stick coated steel)	1
Air-Fryer (5L)	AF-005	Basket handle with latch	1
Air-Fryer (5L)	AF-006	Heating element – nichrome coil	1
Air-Fryer (5L)	AF-007	Fan motor	1
Air-Fryer (5L)	AF-008	Fan blade/impeller	1
Air-Fryer (5L)	AF-009	Air guide/reflector shield	1
Air-Fryer (5L)	AF-010	Control PCB (digital) / MCU	1
Air-Fryer (5L)	AF-011	Display module (LED/LCD)	1
Air-Fryer (5L)	AF-012	Keypad/rotary encoder assembly	1
Air-Fryer (5L)	AF-013	Temperature sensor (NTC)	1

Air-Fryer (5L)	AF-014	Thermal fuse	1
Air-Fryer (5L)	AF-015	Door/drawer micro-switch (safety)	1
Air-Fryer (5L)	AF-016	Internal wiring harness	1
Air-Fryer (5L)	AF-017	Power cord & plug	1
Air-Fryer (5L)	AF-018	Vent grille/mesh	1
Air-Fryer (5L)	AF-019	PTFE/silicone seals & pads	2
Air-Fryer (5L)	AF-020	Screws & mechanical fasteners (assorted)	16
Air-Fryer (5L)	AF-021	Rubber feet pads	4
Air-Fryer (5L)	AF-022	User manual & recipe booklet	1
Air-Fryer (5L)	AF-023	Packaging box & protective foam	1

2. Requirement for each component

Table 5.6: Quantity for Tri-Ply Cookware Set

Product Type	Component Code	Quantity per Unit	2026	2027	2028	2029	2030
Tri-Ply Cookware Set	CW-001	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-002	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-003	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-004	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-005	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-006	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-007	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-008	2	200488	676646	102979 8	114570 6	104629 6

Tri-Ply Cookware Set	CW-009	4	400976	135329 2	205959 6	229141 2	209259 2
Tri-Ply Cookware Set	CW-010	2	200488	676646	102979 8	114570 6	104629 6
Tri-Ply Cookware Set	CW-011	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-012	14	140341 6	473652 2	720858 6	801994 2	732407 2
Tri-Ply Cookware Set	CW-013	4	400976	135329 2	205959 6	229141 2	209259 2
Tri-Ply Cookware Set	CW-014	4	400976	135329 2	205959 6	229141 2	209259 2
Tri-Ply Cookware Set	CW-015	4	400976	135329 2	205959 6	229141 2	209259 2
Tri-Ply Cookware Set	CW-016	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-017	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-018	4	400976	135329 2	205959 6	229141 2	209259 2

Tri-Ply Cookware Set	CW-019	1	100244	338323	514899	572853	523148
Tri-Ply Cookware Set	CW-020	1	100244	338323	514899	572853	523148

Table 5.7: Quantity for Non-stick Fry-Pan

Product Type	Component Code	Quantity per Unit	2026	2027	2028	2029	2030
Non-stick Fry-Pan	FP-001	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-002	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-003	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-004	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-005	1	500214	932690	1343283	1486052	1156745

Non-stick Fry-Pan	FP-006	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-007	2	1000428	1865380	2686566	2972104	2313490
Non-stick Fry-Pan	FP-008	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-009	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-010	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-011	1	500214	932690	1343283	1486052	1156745
Non-stick Fry-Pan	FP-012	1	500214	932690	1343283	1486052	1156745

Table 5.8: Quantity for Smart Multi-Cooker (5L)

Product Type	Component Code	Quantity per Unit	2026	2027	2028	2029	2030
Smart Multi-Cooker (5L)	MC-001	1	174465	324081	468510	518305	403449

Smart Multi-Cooker (5L)	MC-002	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-003	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-004	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-005	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-006	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-007	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-008	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-009	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-010	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-011	1	174465	324081	468510	518305	403449

Smart Multi-Cooker (5L)	MC-012	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-013	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-014	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-015	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-016	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-017	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-018	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-019	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-020	12	2093580	388897 2	562212 0	621966 0	4841388
Smart Multi-Cooker (5L)	MC-021	4	697860	129632 4	187404 0	207322 0	1613796

Smart Multi-Cooker (5L)	MC-022	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-023	1	174465	324081	468510	518305	403449
Smart Multi-Cooker (5L)	MC-024	2	348930	648162	937020	103661 0	806898

Table 5.9: Quantity for Variable-Temp Kettle (1.7L)

Product Type	Component Code	Quantity per Unit	2026	2027	2028	2029	2030
Variable-Temp Kettle (1.7L)	EK-001	1	163283	304455	438483	485086	377592
Variable-Temp Kettle (1.7L)	EK-002	1	163283	304455	438483	485086	377592
Variable-Temp Kettle (1.7L)	EK-003	1	163283	304455	438483	485086	377592

Variable- Temp Kettle (1.7L)	EK-004	1	163283	304455	438483	485086	377592
Variable- Temp Kettle (1.7L)	EK-005	1	163283	304455	438483	485086	377592
Variable- Temp Kettle (1.7L)	EK-006	1	163283	304455	438483	485086	377592
Variable- Temp Kettle (1.7L)	EK-007	1	163283	304455	438483	485086	377592
Variable- Temp Kettle (1.7L)	EK-008	1	163283	304455	438483	485086	377592
Variable- Temp Kettle (1.7L)	EK-009	1	163283	304455	438483	485086	377592

Variable-Temp Kettle (1.7L)	EK-010	1	163283	304455	438483	485086	377592
Variable-Temp Kettle (1.7L)	EK-011	1	163283	304455	438483	485086	377592
Variable-Temp Kettle (1.7L)	EK-012	1	163283	304455	438483	485086	377592
Variable-Temp Kettle (1.7L)	EK-013	2	326566	608910	876966	970172	755184
Variable-Temp Kettle (1.7L)	EK-014	10	1632830	3044550	4384830	4850860	3775920
Variable-Temp Kettle (1.7L)	EK-015	1	163283	304455	438483	485086	377592

Variable-Temp Kettle (1.7L)	EK-016	1	163283	304455	438483	485086	377592
Variable-Temp Kettle (1.7L)	EK-017	1	163283	304455	438483	485086	377592
Variable-Temp Kettle (1.7L)	EK-018	1	163283	304455	438483	485086	377592

Table 5.10: Quantity for Air-Fryer (5L)

Product Type	Component Code	Quantity per Unit	2026	2027	2028	2029	2030
Air-Fryer (5L)	AF-001	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-002	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-003	1	21795	40638	58528	64748	50400

Air-Fryer (5L)	AF-004	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-005	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-006	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-007	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-008	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-009	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-010	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-011	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-012	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-013	1	21795	40638	58528	64748	50400

Air-Fryer (5L)	AF-014	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-015	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-016	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-017	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-018	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-019	2	43590	81276	117056	129496	100800
Air-Fryer (5L)	AF-020	16	348720	650208	936448	1035968	806400
Air-Fryer (5L)	AF-021	4	87180	162552	234112	258992	201600
Air-Fryer (5L)	AF-022	1	21795	40638	58528	64748	50400
Air-Fryer (5L)	AF-023	1	21795	40638	58528	64748	50400

3. Potential Supplier

Table 5.11: Suggested Suppliers for Tri-Ply Cookware Set

Product Type	Component Code	Key Raw Materials	Suggested Suppliers
Tri-Ply Cookware Set	CW-001	Stainless Steel, Aluminum	Oristar Corporation , MRS Steel (for Stainless Steel); Rhine Vietnam , East Asia Aluminum Company Limited (for Aluminum)
Tri-Ply Cookware Set	CW-002	Stainless Steel, Aluminum	Oristar Corporation , MRS Steel (for Stainless Steel); Rhine Vietnam , East Asia Aluminum Company Limited (for Aluminum)
Tri-Ply Cookware Set	CW-003	Stainless Steel, Aluminum	Oristar Corporation , MRS Steel (for Stainless Steel); Rhine Vietnam , East Asia Aluminum Company Limited (for Aluminum)
Tri-Ply Cookware Set	CW-004	Stainless Steel, Aluminum	Oristar Corporation , MRS Steel (for Stainless Steel); Rhine Vietnam , East Asia Aluminum Company Limited (for Aluminum)
Tri-Ply Cookware Set	CW-005	Stainless Steel, Aluminum	Oristar Corporation , MRS Steel (for Stainless Steel); Rhine Vietnam , East Asia Aluminum Company Limited (for Aluminum)
Tri-Ply Cookware Set	CW-006	Tempered Glass, Stainless Steel	Hai Long Glass , Bao Tran Glass (for Tempered Glass); Inox Việt Nam , Hoa Sen Group (for Stainless Steel)

Tri-Ply Cookware Set	CW-007	Tempered Glass, Stainless Steel	Hai Long Glass , Bao Tran Glass (for Tempered Glass); Inox Việt Nam , Hoa Sen Group (for Stainless Steel)
Tri-Ply Cookware Set	CW-008	Tempered Glass, Stainless Steel	Hai Long Glass , Bao Tran Glass (for Tempered Glass); Inox Việt Nam , Hoa Sen Group (for Stainless Steel)
Tri-Ply Cookware Set	CW-009	Stainless Steel	Oristar Corporation , MRS Steel
Tri-Ply Cookware Set	CW-010	Stainless Steel	Oristar Corporation , MRS Steel
Tri-Ply Cookware Set	CW-011	Stainless Steel	Oristar Corporation , MRS Steel
Tri-Ply Cookware Set	CW-012	Stainless Steel	Oristar Corporation , MRS Steel
Tri-Ply Cookware Set	CW-013	Stainless Steel	Oristar Corporation , MRS Steel
Tri-Ply Cookware Set	CW-014	Stainless Steel	Oristar Corporation , MRS Steel

Tri-Ply Cookware Set	CW-015	Stainless Steel	Oristar Corporation , MRS Steel
Tri-Ply Cookware Set	CW-016	Polishing Compound	BMA Vietnam , Hanhe Chemical Vietnam
Tri-Ply Cookware Set	CW-017	Passivation Cleaning Agent	Hanhe Chemical , Hanwang Vietnam
Tri-Ply Cookware Set	CW-018	Silicone Rubber	Tech-Link Silicones , Jhao Yang Rubber
Tri-Ply Cookware Set	CW-019	Cardboard/Paper	Khang Thanh , Binh Minh Packaging
Tri-Ply Cookware Set	CW-020	Cardboard	Khang Thanh , Binh Minh Packaging

Table 5.12: Suggested Suppliers for Non-stick Fry-Pan

Product Type	Component Code	Key Raw Materials	Suggested Supplier
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Non-stick Fry-Pan	FP-001	Aluminum	Rhine Vietnam , East Asia Aluminum Company Limited
Non-stick Fry-Pan	FP-002	Stainless Steel	Oristar Corporation , MRS Steel
Non-stick Fry-Pan	FP-003	PTFE, Ceramic	Nichias Haiphong , Valqua Vietnam (for PTFE); Techno Coatings Vietnam , Minh Tien Ceramic (for Ceramic)
Non-stick Fry-Pan	FP-004	PTFE, Ceramic	Nichias Haiphong , Valqua Vietnam (for PTFE); Techno Coatings Vietnam , Minh Tien Ceramic (for Ceramic)
Non-stick Fry-Pan	FP-005	PTFE, Ceramic	Nichias Haiphong , Valqua Vietnam (for PTFE); Techno Coatings Vietnam , Minh Tien Ceramic (for Ceramic)
Non-stick Fry-Pan	FP-006	Stainless Steel, Silicone Rubber	Oristar Corporation , MRS Steel (for Stainless Steel); Tech-Link Silicones , Jhao Yang Rubber (for Silicone)
Non-stick Fry-Pan	FP-007	Stainless Steel	Oristar Corporation , MRS Steel
Non-stick Fry-Pan	FP-008	Silicone Rubber	Tech-Link Silicones , Jhao Yang Rubber

Non-stick Fry-Pan	FP-009	Exterior Paint/Clear Coat	VPIC Group , Chemtradeasia Vietnam
Non-stick Fry-Pan	FP-010	Adhesive/Braze Material	Avantek Vietnam , Hupuna Group
Non-stick Fry-Pan	FP-011	Cardboard/Paper	Khang Thanh , Binh Minh Packaging
Non-stick Fry-Pan	FP-012	Cardboard	Khang Thanh , Binh Minh Packaging

Table 5.13: Suggested Suppliers for Smart Multi-Cooker (5L)

Product Type	Component Code	Key Raw Materials	Suggested Suppliers
Smart Multi-Cooker (5L)	MC-001	Stainless Steel	Oristar Corporation , MRS Steel
Smart Multi-Cooker (5L)	MC-002	ABS Plastic	RD Vietnam , Kanetora
Smart Multi-Cooker (5L)	MC-003	PP Plastic	Kanetora , TLD Vietnam

Smart Multi-Cooker (5L)	MC-004	Aluminum, PTFE/Ceramic	Rhine Vietnam , East Asia Aluminum Company Limited (for Aluminum); Nichias Haiphong , Techno Coatings Vietnam (for Non-stick)
Smart Multi-Cooker (5L)	MC-005	Nichrome	RS Components Vietnam , AS ONE Misumi
Smart Multi-Cooker (5L)	MC-006	Copper Wire (for wiring)	Hoang Khanh , LS Vina
Smart Multi-Cooker (5L)	MC-007	Stainless Steel	Oristar Corporation , MRS Steel
Smart Multi-Cooker (5L)	MC-008	Silicone Rubber	Tech-Link Silicones , Jhao Yang Rubber
Smart Multi-Cooker (5L)	MC-009	Stainless Steel, Silicone	Oristar Corporation (for Stainless Steel); Tech-Link Silicones (for Silicone)
Smart Multi-Cooker (5L)	MC-010	Stainless Steel	Oristar Corporation , MRS Steel
Smart Multi-Cooker (5L)	MC-011	PCB Raw Materials	Cicor Group , IBE Electronics
Smart Multi-Cooker (5L)	MC-012	PCB Raw Materials	Cicor Group , IBE Electronics

Smart Multi-Cooker (5L)	MC-013	PP Plastic	Kanetora , TLD Vietnam
Smart Multi-Cooker (5L)	MC-014	Copper Wire	Hoang Khanh , LS Vina
Smart Multi-Cooker (5L)	MC-015	Copper Wire	Hoang Khanh , LS Vina
Smart Multi-Cooker (5L)	MC-016	Copper Wire	Hoang Khanh , LS Vina
Smart Multi-Cooker (5L)	MC-017	PP Plastic	Kanetora , TLD Vietnam
Smart Multi-Cooker (5L)	MC-018	PP Plastic	Kanetora , TLD Vietnam
Smart Multi-Cooker (5L)	MC-019	Stainless Steel	Oristar Corporation , MRS Steel
Smart Multi-Cooker (5L)	MC-020	Stainless Steel	Oristar Corporation , MRS Steel
Smart Multi-Cooker (5L)	MC-021	Rubber	Dau Tieng Rubber Corporation , Son Thanh Rubber
Smart Multi-Cooker (5L)	MC-022	Cardboard/Paper	Khang Thanh , Binh Minh Packaging

Smart Multi-Cooker (5L)	MC-023	Cardboard	Khang Thanh , Binh Minh Packaging
Smart Multi-Cooker (5L)	MC-024	Foam	SAM Packaging , EPS Mien Trung

Table 5.14: Suggested Suppliers for Variable-Temp Kettle (1.7L)

Product Type	Component Code	Key Raw Materials	Suggested Suppliers
Variable-Temp Kettle (1.7L)	EK-001	Stainless Steel	Oristar Corporation , MRS Steel
Variable-Temp Kettle (1.7L)	EK-002	Tempered Glass	Hai Long Glass , Bao Tran Glass
Variable-Temp Kettle (1.7L)	EK-003	Stainless Steel	Oristar Corporation , MRS Steel
Variable-Temp Kettle (1.7L)	EK-004	PP Plastic, Stainless Steel, Rubber (soft-touch)	Kanetora (for PP); Oristar Corporation (for SS); Dau Tieng Rubber Corporation (for Rubber)

Variable-Temp Kettle (1.7L)	EK-005	Stainless Steel	Oristar Corporation , MRS Steel
Variable-Temp Kettle (1.7L)	EK-006	Stainless Steel	Oristar Corporation , MRS Steel
Variable-Temp Kettle (1.7L)	EK-007	Stainless Steel	Oristar Corporation , MRS Steel
Variable-Temp Kettle (1.7L)	EK-008	Copper Wire	Hoang Khanh , LS Vina
Variable-Temp Kettle (1.7L)	EK-009	PCB Raw Materials	Cicor Group , IBE Electronics
Variable-Temp Kettle (1.7L)	EK-010	PCB Raw Materials	Cicor Group , IBE Electronics
Variable-Temp Kettle (1.7L)	EK-011	Copper Wire	Hoang Khanh , LS Vina
Variable-Temp Kettle (1.7L)	EK-012	Copper Wire, PP Plastic	Hoang Khanh (for Copper); Kanetora (for PP)

Variable-Temp Kettle (1.7L)	EK-013	Silicone Rubber	Tech-Link Silicones , Jhao Yang Rubber
Variable-Temp Kettle (1.7L)	EK-014	Stainless Steel	Oristar Corporation , MRS Steel
Variable-Temp Kettle (1.7L)	EK-015	Copper Wire	Hoang Khanh , LS Vina
Variable-Temp Kettle (1.7L)	EK-016	Cardboard/Paper	Khang Thanh , Binh Minh Packaging
Variable-Temp Kettle (1.7L)	EK-017	Cardboard/Paper	Khang Thanh , Binh Minh Packaging
Variable-Temp Kettle (1.7L)	EK-018	Cardboard	Khang Thanh , Binh Minh Packaging

Table 5.15: Suggested Suppliers for Air-Fryer (5L)

Product Type	Component Code	Key Raw Materials	Suggested Suppliers
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Air-Fryer (5L)	AF-001	PP Plastic	Kanetora , TLD Vietnam
Air-Fryer (5L)	AF-002	PP Plastic	Kanetora , TLD Vietnam
Air-Fryer (5L)	AF-003	Steel, PTFE/Ceramic	MRS Steel (for Steel); Nichias Haiphong , Techno Coatings Vietnam (for Non-stick)
Air-Fryer (5L)	AF-004	Steel, PTFE/Ceramic	MRS Steel (for Steel); Nichias Haiphong , Techno Coatings Vietnam (for Non-stick)
Air-Fryer (5L)	AF-005	PP Plastic	Kanetora , TLD Vietnam
Air-Fryer (5L)	AF-006	Nichrome	RS Components Vietnam , AS ONE Misumi
Air-Fryer (5L)	AF-007	Copper Wire	Hoang Khanh , LS Vina
Air-Fryer (5L)	AF-008	PP Plastic	Kanetora , TLD Vietnam
Air-Fryer (5L)	AF-009	Stainless Steel	Oristar Corporation , MRS Steel
Air-Fryer (5L)	AF-010	PCB Raw Materials	Cicor Group , IBE Electronics

Air-Fryer (5L)	AF-011	PCB Raw Materials	Cicor Group , IBE Electronics
Air-Fryer (5L)	AF-012	PP Plastic	Kanetora , TLD Vietnam
Air-Fryer (5L)	AF-013	Copper Wire	Hoang Khanh , LS Vina
Air-Fryer (5L)	AF-014	Copper Wire	Hoang Khanh , LS Vina
Air-Fryer (5L)	AF-015	PP Plastic	Kanetora , TLD Vietnam
Air-Fryer (5L)	AF-016	Copper Wire	Hoang Khanh , LS Vina
Air-Fryer (5L)	AF-017	Copper Wire	Hoang Khanh , LS Vina
Air-Fryer (5L)	AF-018	Stainless Steel	Oristar Corporation , MRS Steel
Air-Fryer (5L)	AF-019	PTFE, Silicone Rubber	Nichias Haiphong (for PTFE); Tech-Link Silicones (for Silicone)
Air-Fryer (5L)	AF-020	Stainless Steel	Oristar Corporation , MRS Steel

Air-Fryer (5L)	AF-021	Rubber	Dau Tieng Rubber Corporation , Son Thanh Rubber
Air-Fryer (5L)	AF-022	Cardboard/Paper	Khang Thanh , Binh Minh Packaging
Air-Fryer (5L)	AF-023	Cardboard, Foam	Khang Thanh (for Cardboard); SAM Packaging (for Foam)

4. Comparison between suppliers

Table 5.16: Comparison between suppliers for Metals & Industrial Materials

Supplier Name	Location	Primary Products/Services	Lead-time	Currency Risk	Assessment	Source(s)
Metals & Industrial Materials						
Hoa Sen Group	Multiple factories, including in Binh Duong (Phu My).	Coated steel sheets, steel pipes, plastic building materials.	Very Short	Low	Strong. As a major publicly listed company (HSG), it publishes annual reports with detailed sustainability and governance sections. Focus on green technology and community support.	(Hoa Sen Group, n.d.)

Oristar Corporation	HCMC, Hanoi, Da Nang.	Special steel, alloy steel, industrial machinery parts.	Short (from HCMC warehouse)	Medium (Imports special steel, may prefer USD)	Moderate. The company website mentions a commitment to quality (ISO 9001) but provides limited public information on specific environmental or social programs.	(Oristar, n.d.)
MRS Steel	HCMC	Sourcing agent and trader for Vietnamese steel products (HRC, CRC, galvanized steel).	Short	Medium (Acts as a trader, often dealing in USD for export/import)	As a trading and sourcing company, its direct environmental footprint is low, but its influence is on the supply chain.	(MRS Steel, n.d.)
East Asia Aluminum	Binh Duong	Extruded aluminum profiles for industrial and construction use.	Very Short	Low	focuses on product quality and certifications like ISO 9001.	(Nhom Dong A, n.d.)
Inox Việt Nam	HCMC	Stainless steel products, sheets, coils, pipes, and	Short	Medium (Depends on raw material import costs)	Focus is primarily on product specifications and quality standards.	(Inox Vietnam, n.d.)

		custom fabrication.				
VPIC Group	Dong Nai	OEM/ODM for metalworking, stamping, forging, casting (e.g., automotive, fitness equipment parts).	Short	Medium (OEM for international clients, likely uses USD)	Moderate. As a supplier to major international brands, it likely adheres to client-mandated social and environmental standards (audits). ISO 9001, 14001, and IATF 16949 certified.	(VPIC Group, n.d.)
LS Vina	Hai Phong	Electric wires and cables.	Long	Medium (Joint venture with Korean company, may use USD)	Strong. Part of the global LS Group, which has robust ESG policies. LS Vina holds certifications like ISO 14001 and ISO 45001, indicating strong environmental and safety standards.	(LS Vina Cable, n.d.)
Rhine Vietnam	HCMC	Industrial lubricants, chemicals, metalworking fluids.	Short	Medium (Distributor for foreign brands)	Focuses on product quality and technical specifications.	(Rhine Vietnam, n.d.)

Table 5.17: Comparison between suppliers for Glass & Ceramics

Supplier Name	Location	Primary Products/Services	Lead-time	Currency Risk	Assessment	Source(s)
Glass & Ceramics						
Bao Tran Glass	Binh Duong	Tempered glass, laminated glass, decorative glass processing.	Very Short	Low	As a local B2B supplier. Operations are subject to local environmental regulations.	(Bao Tran Glass, n.d.)
Hai Long Glass	Hanoi	Safety glass, architectural glass, tempered and laminated glass.	Long	Low	Moderate. The company highlights its use of modern, energy-efficient technology (e.g., from Europe). It has been involved in many "green building" projects, implying a focus on sustainable products.	(Hai Long Glass, n.d.)
Minh Tien	Dong Nai	Industrial ceramics, refractory	Short	Low	Focus is on product quality (ISO 9001)	(Minh Tien Ceramic, n.d.)

Ceramic		materials, technical ceramics.				
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Table 5.18: Comparison between suppliers for Chemicals, Coatings, Rubber & Sealants

Supplier Name	Location	Primary Products/Services	Lead-time	Currency Risk	Assessment	Source(s)
Chemicals, Coatings, Rubber & Sealants						
Dau Tieng Rubber	Binh Duong	Natural rubber (SVR, latex), processed rubber products.	Very Short	Low	Moderate. As a major state-affiliated corporation, it follows national guidelines. It mentions reforestation and community development programs. Adherence to sustainable farming practices is a key industry metric.	(Dau Tieng Rubber, n.d.)
BMA Vietnam	Dong Nai	Adhesives, sealants, and functional coatings.	Short	Medium (Part of a global group, may invoice in USD)	Strong. As part of the German BMA Group, it operates under stringent European ESG standards. Focus on developing eco-friendly	(BMA Vietnam, n.d.)

					products and ensuring workplace safety.	
Hanhe Chemical	HCMC	Adhesives, hot melt adhesives.	Short	Medium (May rely on imported raw materials)	focuses on product applications and technical details	(Hanhe Chemical, n.d.)
Tech-Link Silicones	Binh Duong	Silicone rubber compounds and products.	Very Short	Low	Moderate. The company is ISO 9001 and ISO 14001 certified, indicating a formal commitment to quality and environmental management systems.	(Tech-Link Silicones, n.d.)
Jhao Yang Rubber	Binh Duong	Custom rubber parts, O-rings, gaskets, seals (Taiwanese company).	Very Short	Medium (FDI company, may prefer USD)	Moderate. As an FDI manufacturer, it likely complies with international labor and environmental standards required by its clients. ISO 9001 certified.	(Jhao Yang Rubber, n.d.)
Chemtradeasia	HCMC	Industrial chemical distribution.	Short	High (Global trader, prices are typically USD-based)	The parent company has a policy on responsible chemical handling and sourcing	(Tradeasia International, n.d.)

Techno Coatings	Dong Nai	Industrial coatings, powder coating, liquid painting services.	Short	Low	Focuses on service quality. Operations would be subject to strict local regulations regarding VOC emissions and waste disposal.	(Techno Coatings, n.d.)
Son Thanh Rubber	HCMC	Industrial rubber components, rollers, technical rubber.	Short	Low	A local manufacturer focused on B2B industrial supply.	(Son Thanh Rubber, n.d.)
Nichias Haiphong	Hai Phong	Gaskets, packing, insulation materials, fluoropolymer products (Japanese company).	Long	High (Japanese MNC, likely trades in USD/JPY)	Very Strong. Operates under the robust ESG framework of its parent, Nichias Corporation, which includes detailed reporting on CO2 emissions, waste reduction, and social contributions. ISO 14001 certified.	(Nichias Vietnam, n.d.)
Valqua Vietnam	Dong Nai	Seals, gaskets, functional resin products	Short	High (Japanese MNC, likely trades in USD/JPY)	Very Strong. Parent company Valqua Ltd. has a comprehensive sustainability policy and reports publicly on environmental and social	(Valqua, n.d.)

		(Japanese company).			performance. The Vietnam factory (ISO 14001 certified) is a key part of this strategy.	
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Table 5.19: Comparison between suppliers for Packaging

Supplier Name	Location	Primary Products/Services	Lead-time	Currency Risk	Assessment	Source(s)
Packaging						
Binh Minh Packaging	HCMC / Long An	Flexible plastic packaging (complex films).	Short	Low	Moderate. As a publicly listed company (BPC), it provides some governance and social data in annual reports. Has certifications like ISO 9001 and BRC (for food safety).	(Binh Minh Packaging, n.d.)
Khang Thanh	HCMC	High-end paper boxes, gift boxes, paper bags.	Short	Low	Strong. Strong focus on sustainability. FSC certified, promoting responsible	(Khang Thanh, n.d.)

					forestry. The company website has a dedicated section on its social responsibility, environmental protection, and ethical business practices.	
SAM Packaging	HCMC	Corrugated cardboard boxes and packaging.	Short	Low	Focuses on product solutions and manufacturing capacity. Likely uses recycled paper, a key positive environmental factor in this industry	(SAM Production and Trading, n.d.)
EPS Mien Trung	Quang Nam (Central Vietnam)	EPS (Expanded Polystyrene) foam products for packaging and insulation.	Medium	Low	The sustainability of EPS is controversial; the company's ESG position would depend on its recycling initiatives.	(EPS Mien Trung, n.d.)

Table 5.20: Comparison between suppliers for Electronics, Components & Distribution

Supplier Name	Location	Primary Products/Services	Lead-time	Currency Risk	Assessment	Source(s)
Electronics, Components & Distribution						
Cicor Group	Da Nang	Electronics Manufacturing Services (EMS), PCB assembly, box build.	Medium	High (Swiss-based MNC, trades in USD/EUR)	Very Strong. Operates under the comprehensive ESG framework of its Swiss parent company, which is publicly listed and reports extensively on environmental impact, ethical sourcing, and employee welfare.	(Cicor, n.d.)
IBE Electronics	HCMC	EMS, cable assemblies, custom electronics manufacturing.	Short	High (German ownership, likely trades in USD/EUR)	Strong. As a German-owned company, it adheres to high standards for labor, safety (ISO 45001), and quality. Strong focus on employee training and welfare mentioned on their site.	(IBE Electronics, n.d.)
RS Components	HCMC	Distributor of electronic, electrical, and industrial	Short (for stocked items)	Medium (Global pricing, but may	Very Strong. The parent, RS Group plc, is a leader in ESG. It has ambitious targets for sustainability,	(RS Components

		components (MRO).		transact in VND)	responsible sourcing, and community impact, which apply globally to all its operations.	Vietnam, n.d.)
AS ONE Misumi	HCMC, Hanoi, Da Nang	Distributor of factory automation, press die, and plastic mold components.	Short (for stocked items)	Medium (Global company, prices linked to JPY/USD)	Very Strong. Parent company Misumi Group Inc. has a detailed CSR and ESG policy covering environmental management, supply chain responsibility, and human rights. These policies are implemented across its global subsidiaries.	(Misumi Vietnam, n.d.)
Avantek Vietnam	Bac Ninh	Assembly of electronic components and modules.	Long	Medium (FDI company)	As an electronics supplier, it would be subject to client audits and standards like RoHS.	(Avantek Precision, n.d.)
Hupuna Group	Bac Ninh	Precision engineering, metal stamping for electronics.	Long	Medium (FDI company)	Focuses on technical capabilities and quality certifications (ISO 9001, IATF 16949).	(Hupuna, n.d.)
RD Vietnam	Hai Phong	Injection molding and assembly for	Long	Medium (FDI company)	Information is focused on manufacturing services. Adherence to international	(RD Plas, n.d.)

		electronic devices.			standards is likely driven by customer requirements.	
Kanetora	Dong Nai	Precision plastic components (Japanese company).	Short	High (Japanese MNC)	Strong. Likely operates under the ESG guidelines of its Japanese parent company. Japanese manufacturers typically have strong internal policies on environmental management and quality control.	(Kanetora Vietnam, n.d.)
TLD Vietnam	Bac Ninh	Precision plastic injection molding (Korean company).	Long	High (Korean FDI)	Moderate. As a Korean FDI, it likely has structured management systems. Holds IATF 16949 and ISO 14001 certifications, showing commitment to automotive quality and environmental standards.	(TLD Vietnam, n.d.)
Hoang Khanh	HCMC	Plastic injection molding, mold making.	Short	Low	Focuses on technical expertise and product portfolio.	(hoangkhanh, n.d.)
Hanwang Vietnam	Vinh Phuc	Camera modules and electronic components	Long	High (Korean FDI)	Moderate. Operates within the electronics supply chain which requires adherence to standards like RoHS (restriction of	(The Trade Vision, n.d.)

		(Korean company).			hazardous substances) and conflict minerals policies, driven by end-customers.	
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5. Purchasing strategic

The Supplier Preferencing Matrix (also known as the Supplier Perception Matrix) is a strategic tool that illustrates how suppliers perceive organization as a customer. It uses two axes: Account Attractiveness (high if your business offers growth potential, ease of collaboration, profitability, and strategic alignment; low otherwise) and Relative Value of Business (high if your spend or volume represents a significant portion of the supplier's revenue; low otherwise). The quadrants guide how suppliers are likely to treat company:

Development (High Attractiveness, Low Value): Suppliers nurture the relationship, expand business, and seek opportunities.

Core (High Attractiveness, High Value): Suppliers defend the account vigorously with high service and responsiveness.

Nuisance (Low Attractiveness, Low Value): Suppliers give minimal attention and may deprioritize or drop you without concern.

Exploitable (Low Attractiveness, High Value): Suppliers exploit the relationship through premium pricing, short-term advantages, and risk of poor service.

Based on the provided BOM data and MPS from 2026 to 2030, volumes are expected to grow across all products (e.g., Tri-Ply Cookware Set from 100,244 to 523,148 units; Non-stick Fry-Pan from 500,214 to 1,156,745 units). This growth will naturally increase the relative value of business for many suppliers. However, attractiveness remains low for most due to moderate growth ratios (~2.3x for most products, except ~5.2x for Cookware, which drives higher attractiveness for associated suppliers like aluminum providers).

The current (2026) categorization shows no Core suppliers, several in Development (e.g., East Asia Aluminum Company Limited, Rhine Vietnam), many in Nuisance, and key ones in

Exploitable (e.g., Oristar Corporation, MRS Steel). By 2030, East Asia Aluminum and Rhine Vietnam shift to Core due to higher volumes, but Exploitable and Nuisance persist.

The desired future state for 2030 is to maximize suppliers in Core and Development (target: 70-80% of key suppliers) while minimizing Nuisance and Exploitable (target: <20%). This ensures preferential treatment, such as better pricing, innovation collaboration, and supply reliability. Achieving this requires a phased purchasing strategy focused on volume growth communication, relationship building, and targeted development to boost attractiveness.

Overall Purchasing Strategy for 2030

Fine Scandinavia will proactively communicate its 2030 volume forecasts to suppliers starting in Q4 2025. This early communication is key to signaling the long-term attractiveness of a partnership and securing crucial commitments. To manage risk, Fine Scandinavia will focus on reducing its dependency on Exploitable suppliers by qualifying one to two alternative sources for critical materials like stainless steel and aluminum.

Performance is central to Fine Scandinavia's approach. The company will track key performance indicators (KPIs) such as on-time delivery (>95%), quality defects (<1%), and annual cost savings (5-10%), and these metrics will be tied directly to contracts. The adoption of digital tools, including an ERP for forecasting and supplier portals for collaboration, will be critical for enhancing the ease of doing business. Furthermore, a focus on ESG (Environmental, Social, and Governance) goals is a priority, as it will boost Fine Scandinavia's attractiveness within Vietnam's manufacturing sector. The company will prioritize suppliers who align with these sustainability objectives.

This strategy will be executed in three phases: Phase 1 (2025-2026) involves assessing and categorizing suppliers; Phase 2 (2027-2028) focuses on developing relationships; and Phase 3 (2029-2030) is dedicated to optimizing and monitoring performance. By 2030, the goal is to increase overall attractiveness by 20-30% (measured via supplier feedback surveys) and generate value through organic growth. Ultimately, Fine Scandinavia aims to strategically shift four to six suppliers from the Exploitable/Nuisance quadrants to the more valuable Development/Core categories.

Use the matrix to customize approaches. Below is a table outlining strategies for 2026 categories, with adjustments for 2030 shifts. Focus on high-impact suppliers (e.g., those for stainless steel, aluminum, which constitute ~40-50% of BOM components).

In 2026

Category	Description	Suppliers
Development (High Attractiveness, Low Value)	Nurture clients, expand business, seek new opportunities.	Bao Tran Glass, East Asia Aluminum Company Limited, Hai Long Glass, Hoa Sen Group, Inox Việt Nam, Kanetora, Rhine Vietnam (Also including estimated: BMA Vietnam, Hanhe Chemical Vietnam, Hanhe Chemical, Hanwang Vietnam)
Core (High Attractiveness, High Value)	Defend vigorously, high service & response.	(None in this year based on thresholds)
Nuisance (Low Attractiveness, Low Value)	Give low attention, lose without pain.	AS ONE Misumi, Binh Minh Packaging, Hoang Khanh, Khang Thanh, LS Vina, RD Vietnam (estimated), RS Components Vietnam, SAM Packaging, TLD Vietnam (Also including estimated: Avantek Vietnam, Chemtradeasia Vietnam, Cicor Group, Hupuna Group, IBE Electronics, VPIC Group)
Exploitable (Low Attractiveness, High Value)	Drive premium price, seek short term advantage, risk losing customers.	Dau Tieng Rubber Corporation, Jhao Yang Rubber, MRS Steel, Minh Tien Ceramic, Nichias Haiphong, Oristar Corporation, Son Thanh Rubber, Tech-Link Silicones, Techno Coatings Vietnam, Valqua Vietnam

After 4 years

Category	Description	Suppliers
Development (High Attractiveness, Low Value)	Nurture client, expand business, seek new opportunities.	Bao Tran Glass, Hai Long Glass, Hoa Sen Group, Inox Việt Nam, Kanetora (Also including estimated: BMA Vietnam, Hanhe Chemical Vietnam, Hanhe Chemical, Hanwang Vietnam)
Core (High Attractiveness, High Value)	Defend vigorously, high service & response.	East Asia Aluminum Company Limited, Rhine Vietnam
Nuisance (Low Attractiveness, Low Value)	Give low attention, lose without pain.	AS ONE Misumi, Binh Minh Packaging, Hoang Khanh, Khang Thanh, LS Vina, Minh Tien Ceramic, RD Vietnam (estimated), RS Components Vietnam, SAM Packaging, TLD Vietnam, Valqua Vietnam (Also including estimated: Avantek Vietnam, Chemtradeasia Vietnam, Cicor Group, Hupuna Group, IBE Electronics, VPIC Group)
Exploitable (Low Attractiveness, High Value)	Drive premium price, seek short term advantage, risk losing customer.	Dau Tieng Rubber Corporation, Jhao Yang Rubber, MRS Steel, Nichias Haiphong, Oristar Corporation, Son Thanh Rubber, Tech-Link Silicones, Techno Coatings Vietnam

6. Procurement Strategy

A. Single Sourcing

Applied to: Specialized components with high technical requirements or suppliers with unique advantages.

- Components:
 - Tri-Ply Cookware Set: Tri-ply bodies (CW-001 to CW-005) require specialized materials (18/10 SS/Al/magnetic SS). Oristar Corporation and MRS Steel are primary suppliers.
 - Non-stick Fry-Pan: Non-stick coatings (FP-003 to FP-005) using PTFE/ceramic from Nichias Haiphong or Techno Coatings Vietnam.
 - Smart Multi-Cooker: PCB and display module (MC-011, MC-012) from Cicor Group or IBE Electronics.
 - Variable-Temp Kettle: PCB and NTC sensor (EK-009, EK-008) from Cicor Group or IBE Electronics.
 - Air-Fryer: Heating element (AF-006) and PCB (AF-010, AF-011) from RS Components Vietnam or Cicor Group.
- Preferred Suppliers:
 - Oristar Corporation (stainless steel, ISO 9001, short lead-time).

- Nichias Haiphong (PTFE, ISO 14001, strong ESG).
- Cicor Group (PCB, very strong ESG, but medium lead-time and high currency risk).

To ensure supply stability and consistent pricing, the company should sign long-term contracts of three to five years with its key suppliers. These contracts should include clauses that guarantee priority supply and technical support, which will help maintain quality standards. Additionally, the company should conduct annual assessments of supplier performance and scalability to ensure they can meet future demand.

B. Dual Sourcing

Applied to: Common components with multiple supplier options to reduce supply chain risks.

- Components:
 - Tri-Ply Cookware Set: Glass lids (CW-006 to CW-008), silicone bumpers (CW-019), packaging (CW-019, CW-020).
 - Non-stick Fry-Pan: Packaging (FP-011, FP-012), silicone spacer (FP-008).
 - Smart Multi-Cooker: PP plastic components (MC-003, MC-017, MC-018), packaging (MC-022, MC-023).
 - Variable-Temp Kettle: Packaging (EK-016, EK-017, EK-018), PP plastic handle (EK-004).
 - Air-Fryer: PP plastic components (AF-001, AF-002, AF-005), packaging (AF-022, AF-023).
- Suppliers:
 - Glass: Bao Tran Glass (Binh Duong, very short lead-time) and Hai Long Glass (Hanoi, energy-efficient technology).
 - PP Plastic: Kanetora (short lead-time, strong ESG) and TLD Vietnam (longer lead-time, competitive pricing).
 - Silicone Rubber: Tech-Link Silicones (ISO 14001, very short lead-time) and Jhao Yang Rubber (ISO 9001, FDI from Taiwan).
 - Packaging: Khang Thanh (FSC certified, strong ESG) and Binh Minh Packaging (BRC certified, competitive pricing).

The company's strategy is centered on establishing robust, long-term partnerships with its key suppliers. It will formalize these relationships by signing multi-year contracts, typically for

durations of three to five years, to ensure both supply stability and consistent, predictable pricing. Within these agreements, the company will negotiate critical clauses for priority supply and dedicated technical support to guarantee material quality and the swift resolution of any issues. To maintain the effectiveness of these partnerships, it will conduct comprehensive annual assessments to evaluate supplier performance and their scalability to meet its evolving demands.

C. Long-term Framework Contracts

Applied to: Key raw materials with high and stable usage volumes.

- Raw Materials:
 - Stainless Steel: Used across all products (CW-001 to CW-015, FP-002, MC-001, MC-007, MC-019, EK-001, EK-003 to EK-007, AF-009, AF-019, AF-020).
 - Aluminum: Tri-Ply Cookware (CW-001 to CW-005), Non-stick Fry-Pan (FP-001), Smart Multi-Cooker (MC-004).
 - PTFE/Ceramic: Non-stick Fry-Pan (FP-003 to FP-005), Smart Multi-Cooker (MC-004), Air-Fryer (AF-003, AF-004).
 - PCB Raw Materials: Smart Multi-Cooker (MC-011, MC-012), Variable-Temp Kettle (EK-009, EK-010), Air-Fryer (AF-010, AF-011).
- Suppliers:
 - Stainless Steel: Oristar Corporation and MRS Steel (Exploitable, high volume).
 - Aluminum: East Asia Aluminum (Core, high growth) and Rhine Vietnam (Core, short lead-time).
 - PTFE/Ceramic: Nichias Haiphong and Techno Coatings Vietnam (Exploitable, high quality).
 - PCB: Cicor Group (strong ESG, medium lead-time) and IBE Electronics (short lead-time, strong ESG).

The company's risk mitigation strategy involves maintaining at least two qualified suppliers per component to safeguard against supply chain disruptions and price volatility. Order ratios, typically 70:30 or 60:40, will be allocated based on performance metrics such as lead-time and pricing. A key factor in this allocation is prioritizing suppliers with superior Environmental, Social, and Governance (ESG) profiles, such as its engagement with Khang Thanh for packaging. This dual-sourcing framework not only ensures supply continuity but also creates leverage, enabling the company to negotiate more competitive pricing.

D. Seasonal/Bulk Purchasing

Applied to: Components with seasonal price fluctuations or discounts for large orders.

- Components:
 - Packaging (Cardboard/Paper, Foam): CW-019, CW-020, FP-011, FP-012, MC-022, MC-023, MC-024, EK-016, EK-017, EK-018, AF-022, AF-023.
 - Silicone Rubber: CW-019, FP-008, MC-008, MC-009, EK-013, AF-019.
 - Screws/Fasteners: CW-013, CW-014, CW-015, FP-008, MC-021, EK-014, AF-020.
- Suppliers:
 - Packaging: Khang Thanh, Binh Minh Packaging, SAM Packaging, EPS Mien Trung.
 - Silicone Rubber: Tech-Link Silicones, Jhao Yang Rubber.
 - Screws/Fasteners: Oristar Corporation, MRS Steel.

To optimize procurement and storage costs, the company should plan bulk purchases of raw materials in the third or fourth quarter, as prices are typically lower during this period due to increased production ahead of peak seasons. They should also negotiate a 5–10% discount for large orders, basing the negotiations on volume forecasts for 2026–2030. To further reduce long-term storage expenses, the company should consider storing common components, such as screws and packaging, at either their own warehouse in Fine Scandinavia or at the supplier's warehouse.

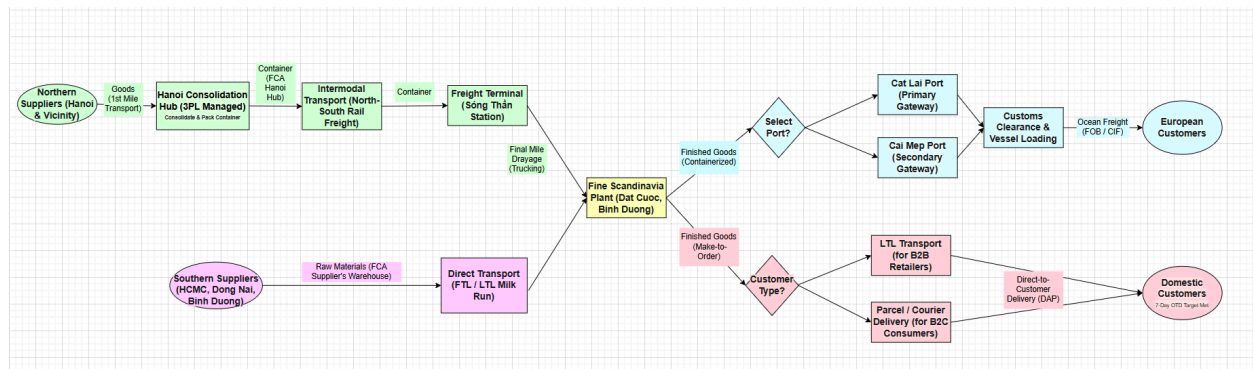
E. Implementation Recommendations

To optimize supply chain management, the company should prioritize its core and development suppliers, such as East Asia Aluminum, Rhine Vietnam, Bao Tran Glass, Hai Long Glass, and Kanetora. Building strategic partnerships with these suppliers and holding regular meetings will help in aligning with future expansion plans. To mitigate currency risk, especially with Foreign Direct Investment (FDI) suppliers like Nichias Haiphong, Valqua Vietnam, and Cicor Group who are exposed to the USD, JPY, and EUR, the company should negotiate payments in Vietnamese Dong (VND) or utilize currency hedging tools. Furthermore, to align with its sustainability goals, the company must prioritize suppliers with strong ESG certifications, such as ISO 14001 and FSC, including Khang Thanh, Cicor Group, and Nichias Haiphong. Finally, to maintain high

technical standards, they should establish periodic quality inspection processes with all single-sourced suppliers like Oristar, Nichias, and Cicor.

VI. Logistics Network Design

The logistics network for the Dat Cuoc project is engineered as a highly integrated and dual-pronged system, designed to support two distinct business models: a high-volume, cost-sensitive export operation for the European market, and a lean, agile Make-to-Order (MTO) fulfillment system for the domestic Vietnamese market. This design prioritizes resilience, cost-efficiency, and alignment with the company's broader strategic objectives, including its purchasing and technology roadmaps.

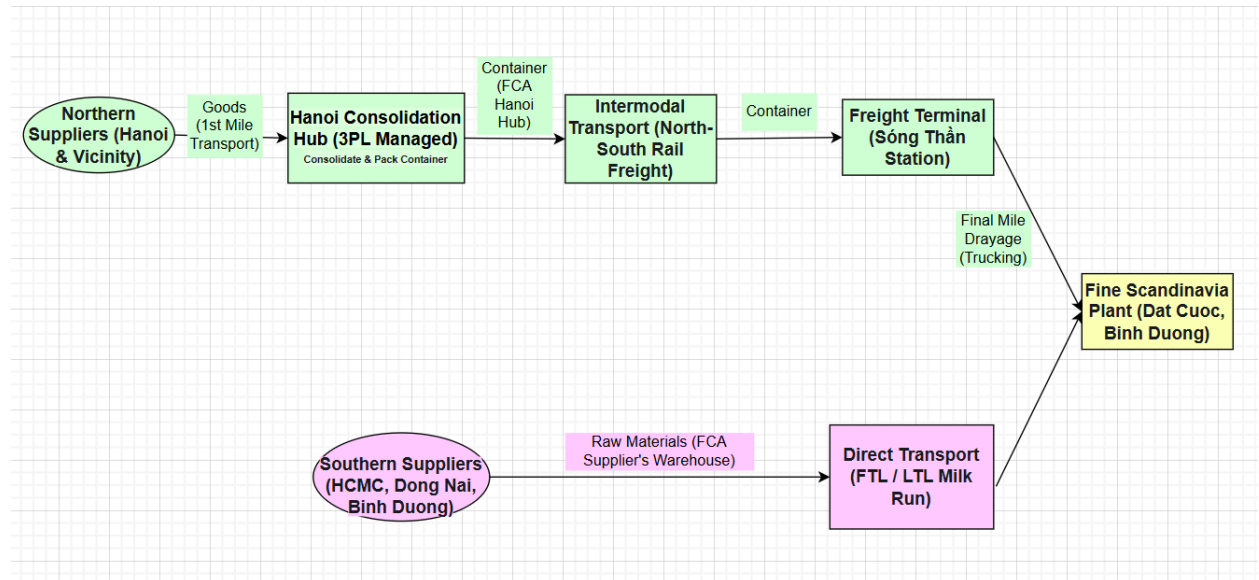


1. Inbound Logistics: A Resilient and Cost-Optimized Supply Funnel

The inbound logistics strategy is bifurcated to address the geographic dispersion of our supplier base. For the Southern Cluster, comprising suppliers in Ho Chi Minh City, Dong Nai, and Binh Duong such as Inox Việt Nam, VPIC Group, and Bao Tran Glass, a direct shipment model is employed. Given their proximity to the Binh Duong plant, direct deliveries via Full Truckload (FTL) or Less-than-Truckload (LTL) services offer the optimal balance of cost and flexibility. The recommended Incoterm is FCA (Free Carrier) at the supplier's warehouse, a strategic choice that provides Fine Scandinavia with direct control over the main carriage, enabling optimized scheduling and consolidation with our preferred logistics partners.

In contrast, the Northern Cluster, which includes suppliers like Hai Long Glass in Hanoi, requires a more sophisticated approach to mitigate high long-haul transportation costs. The strategy centers on a Consolidation Hub managed by a 3rd Party Logistics (3PL) partner in Hanoi. To further optimize cost and enhance sustainability, intermodal transport featuring rail freight is the primary recommendation for the main leg from Hanoi to the south. This approach is not only

cost-effective for high volumes but also reduces the operation's carbon footprint, directly contributing to ESG goals. The governing Incoterm for this cluster is FCA at the Hanoi consolidation hub, ensuring Fine Scandinavia maintains full control over the most complex and costly portion of the inbound journey.

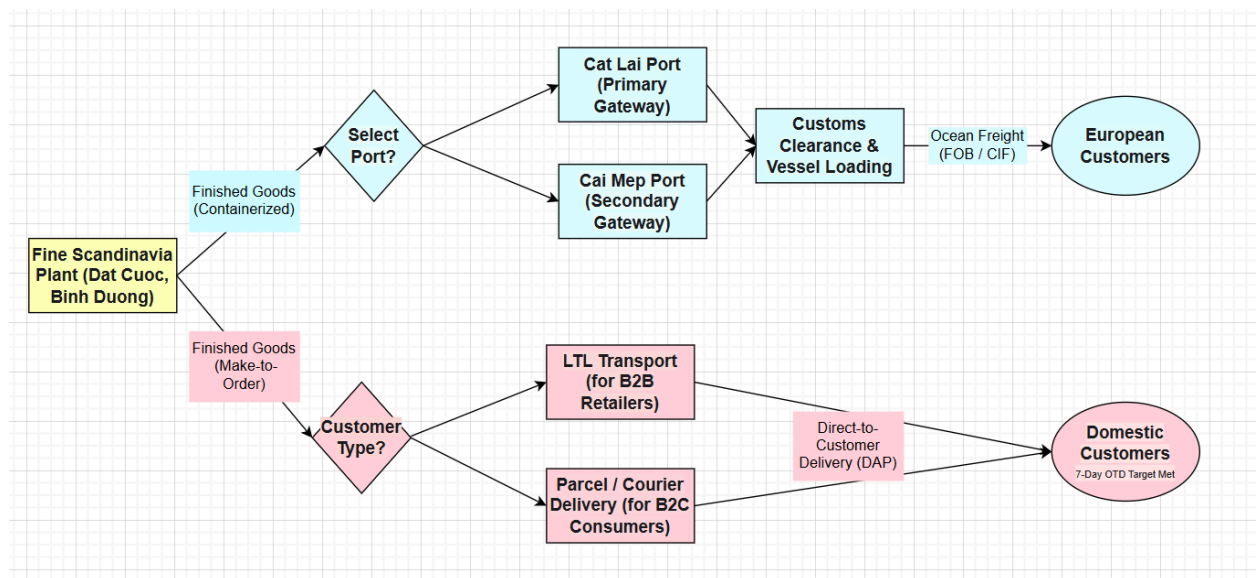


2. Outbound Logistics: A High-Capacity Export Gateway and Agile Domestic Fulfillment

The outbound network is predominantly designed to support the export business, which accounts for over 90% of the factory's projected output. The primary export path flows from the Dat Cuoc plant to the Port of Export. While Cat Lai Port (HCMC) is the optimal gateway due to its proximity and capacity, a flexible strategy that includes Cai Mep Port as a secondary option is essential for mitigating congestion risks. This critical plant-to-port leg will be managed and optimized by a Transportation Management System (TMS), a key component of our technology strategy, to ensure on-time delivery to the vessel. For international shipments via ocean freight, a flexible Incoterm strategy is proposed: FOB (Free on Board) is the preferred term for experienced European buyers, while CIF (Cost, Insurance, and Freight) will be offered as a value-added service for new customers.

For the domestic market, a lean and agile Direct-to-Customer MTO model is implemented. This network bypasses the need for a distribution center, shipping finished goods directly from the Dat Cuoc plant to the customer's address. This flow will be serviced by a mix of LTL road freight for B2B partners and parcel carriers for smaller B2C orders. The standard Incoterm will be DAP

(Delivered at Place), ensuring Fine Scandinavia controls the end-to-end customer experience and meets the strict 7-day delivery target.



This integrated network design is strategically architected to minimize total landed cost by leveraging EVFTA tariff advantages, optimizing transport modes, and fostering strong 3PL partnerships. The result is a resilient, adaptable, and cost-effective logistics system that is fully aligned with the company's operational and strategic goals for the European market.

VII. Quality Management Plan

1. Information

Quality Management Plan (QMP) for Fine Scandinavia's full range of cookware and kitchen appliances. The QMP is designed to:

- Meet or exceed EU legal requirements for product safety, food contact, energy efficiency, and environmental sustainability.
- Deliver consistent quality that matches customer expectations in the European premium household goods market.
- Establish preventive and corrective systems to minimize defects, improve efficiency, and ensure traceability.

The plan is structured into three integrated components:

- Quality Planning: Setting clear specifications, standards, and supplier requirements before production begins.

- Quality Control: Implementing inspections, tests, and checkpoints throughout the supply chain and production process.
- Quality Improvement: Continuously refining processes, materials, and product design based on data and feedback.

It is supplemented by product-specific quality requirements for each main product category, recognizing that cookware and electrical appliances have different risk factors, performance expectations, and compliance needs.

2. General Quality Management Framework

2.1 Quality Planning

The planning phase ensures all design, material, and process choices are fully compliant with EU law and align with brand positioning.

Regulatory Requirements Overview

- Food Contact Safety: EU Regulation (EC) No 1935/2004.
- Electrical Safety: Low Voltage Directive (2014/35/EU) and EMC Directive (2014/30/EU).
- Chemical Safety: RoHS Directive; REACH Regulation.
- Energy Efficiency: EcoDesign Directive.
- National & EN Standards: LFGB, EN 12983-1, EN 60335.

Material & Design Specifications

- Materials: 304 or 18/10 stainless steel, hard-anodized aluminum, BPA-free plastics.
- Design: Ergonomics, safety features, compatibility with multiple hob types.
- Process Design: Closed-loop controls, documented parameters.
- Traceability: QR/barcode for batch tracking.
- Supplier Selection: ISO 9001-certified, dual sourcing.

2.2 Quality Control

Inspection Stage	Control Activity	Method / Standard	Purpose
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Incoming Material Inspection	Verify material composition and certification; visual check for defects	XRF spectrometer, CoC, visual	Prevent non-compliant materials entering production
In-Process Control	Check tolerances, weld strength, coating adhesion; functional checks for electricals	Calipers, pull-test rig, coating gauge, cycle tests	Detect process deviations early
Final Inspection	100% visual & functional checks; electrical safety; EU packaging & labeling compliance	EN test procedures, PAT tester, visual standards	Ensure product meets legal and brand requirements
Defect Handling	Root cause analysis, quarantine, rework or scrap defective batches	NCR system, 5 Whys, corrective action tracking	Prevent recurrence of defects

2.3 Quality Improvement

- Customer Feedback Loop: Aggregate feedback quarterly from EU distributors and online reviews; sentiment analysis for early detection of issues.
- Defect Reduction Tools: SPC, Kaizen, Six Sigma.
- Supplier Development: Audits with scorecards and corrective actions.
- Process Upgrades: Automation for polishing, welding, temperature control.
- Product Innovation: Annual review of materials, coatings, safety features.

Key KPIs:

- Lot Acceptance Rate > 99.5%

- In-Process Defect Rate < 0.5%
- Cpk \geq 1.33 for critical dimensions
- Final Inspection Defect Rate < 0.3%
- Product Return Rate < 1.0%
- NCR Closure Time < 48 hours
- Recurring Defect Rate < 10%
- Migration Test Pass Rate: 100%

3. Product-Specific Quality Plans

Tri-ply Stainless-Steel Cookware Set

- Planning: EN 12983-1 compliance; handle strength \geq 100N/10s; base flatness \leq 0.5mm; surface finish Ra \leq 0.4 μ m.
- Control: Pull test handles, measure base flatness, migration test 3% acetic acid at 100°C for 2 hours.
- Improvement: Upgrade welding fixtures, improve polishing process.

Non-stick Hard-Anodized Fry-pan

- Planning: PTFE-free ceramic coating adhesion \geq 5000 abrasion cycles; anodizing hardness \geq 400HV; thickness 25–50 μ m.
- Control: Hardness tests, abrasion tests, fried egg test.
- Improvement: Implement robotic spray arms, inline coating thickness sensors.

Smart Multi-Cooker / Rice-Pressure Cooker

- Planning: Compliance with LVD, EMC, EN 60335-1/-2-15; multi-level safety features.
- Control: Pressure test 90kPa/60min, full functional test, gasket/valve cycle test (10,000 ops).
- Improvement: Upgrade gasket material, redesign firmware.

Variable-Temperature Electric Kettle

- Planning: Temperature accuracy $\pm 2^{\circ}\text{C}$; LVD/EMC compliance.
- Control: Calibration tests, insulation resistance check, 100% boil test.
- Improvement: Enhance sensor mounting, reinforce PCB.

Air-Fryer / Turbo Convection Oven

- Planning: Compliance with LVD, EMC, EN 60335-2-9, EcoDesign; temperature uniformity $\pm 5^{\circ}\text{C}$.
- Control: Thermocouple chamber logging, noise level $\leq 65\text{dB(A)}$, burn-in test.
- Improvement: Optimize fan blade geometry, add noise dampening.

VIII. Sustainability & EPR Compliance

Fine Scandinavia: A Holistic Approach to Sustainability

Fine Scandinavia demonstrates a comprehensive commitment to sustainability, encompassing strong economic performance, robust social responsibility, and proactive environmental stewardship.

1. Triple bottom line

A. Economic (Profit)

Fine Scandinavia exhibits strong economic performance through its robust and efficient operations. The company boasts a modern, scalable factory with approximately 8,000 square meters in Vietnam and 9,000 square meters in Sweden, staffed by over 250 skilled workers and supported by an ISO-certified production line. This substantial manufacturing capacity enables them to serve a broad global market, reaching customers across Europe, North America, Japan, and Australia, including retail partnerships with six U.S. retailers. Furthermore, their commitment to cost-effective and agile development ensures projects move swiftly from prototype to production, sometimes in as little as two weeks, thereby reducing time-to-market and lowering overall market risk. In summary, Fine Scandinavia demonstrates strong economic performance by optimizing production, expanding globally, and providing efficient product development services.

B. Social (People)

Fine Scandinavia places a significant emphasis on its social responsibilities, prioritizing its people and ethical practices. The company upholds fair labor practices, evidenced by its BSCI certification, which underscores a commitment to safe and equitable working conditions. Fine Scandinavia has also shown leadership in gender equality, receiving the UN Women's Empowerment Principles (WEPs) Award in 2022 for its efforts in promoting gender equality within a traditionally male-dominated sector. Their active commitment to supplier diversity and fairness is highlighted by their participation in a 2024 workshop on gender-responsive procurement, funded by the Australian Government and organized by UN Women. Additionally, they enforce a strict supplier code of conduct, requiring adherence to ethical, quality, and environmental standards, which are regularly verified through audits. In summary, Fine Scandinavia places strong emphasis on social responsibility—supporting equitable labor practices, empowering women, and fostering ethical procurement.

C. Environmental (Planet)

Fine Scandinavia actively demonstrates environmental responsibility through various initiatives and certified management systems. The company holds ISO 14001 certification, an internationally recognized standard for environmental management. They are dedicated to sustainable material sourcing, with steel used in production traceable via Mill Test Certificates and wood sourced in compliance with EUTR (EU Timber Regulation) to combat illegal deforestation. Prioritizing local suppliers helps minimize their environmental footprint, and regular audits are conducted to ensure these environmental standards, alongside ethical and quality benchmarks, are consistently met. Furthermore, their engagement with the broader sustainability discourse is evident in their participation in the 2024 “Green-Eco with Net-Zero” seminar at VIFA ASEAN, where discussions focused on FSC® certification, sustainable development, and carbon credit mechanisms. In summary, Fine Scandinavia demonstrates environmental responsibility through certified management systems, sustainable materials, audited sourcing, and active participation in green development dialogues.

Based on its Triple Bottom Line profile, Fine Scandinavia best fits into the **Strategic** category of sustainability. This classification reflects a deeper, more integrated approach to environmental, social, and economic responsibility than mere compliance or risk mitigation.

Fine Scandinavia clearly **goes beyond mere compliance** in its sustainability efforts. Instead of simply meeting the minimum ISO, BSCI, or EUTR requirements, the company actively engages with international initiatives. Their participation in UN Women's Empowerment Principles (WEPs) and "Green-Eco with Net-Zero" seminars demonstrates a proactive desire to help shape and advance their sustainability approach, showcasing a commitment that extends far beyond regulatory obligations.

Moreover, Fine Scandinavia **integrates sustainability into its core business strategy**. Their dedication to ethical sourcing, leadership in gender equality, and various sustainability certifications are not treated as isolated activities. Instead, these elements are strategically positioned as key components of their value proposition for both customers and suppliers. This indicates that sustainability is seen as an inherent part of their business model, contributing directly to their market appeal, rather than just a means of risk management.

This integrated approach also focuses on **long-term value creation**. Fine Scandinavia aims to generate value not only for its shareholders but also for society at large. By embedding sustainability into its operations and brand identity, the company strengthens its reputation, fosters greater customer loyalty, and builds operational resilience, all of which contribute to sustained growth and success over time.

Finally, Fine Scandinavia demonstrates **proactive engagement with stakeholders**. Their participation in workshops, rigorous supplier audits, and the receipt of prestigious awards highlight that they view sustainability as a significant competitive advantage and a crucial tool for building strong relationships. This collaborative and forward-thinking stance solidifies their position in the Strategic category, where sustainability is a driver of innovation and partnership.

2. A detailed "do-now" roadmap for Fine Scandinavia's Vietnam operations

A. Hit 30% Renewable Electricity

To achieve 30% renewable electricity, Fine Scandinavia can combine self-consumption rooftop solar, Direct Power Purchase Agreements (DPPA) with renewable generators, and I-RECs to cover any shortfalls, reporting Scope 2 emissions using the GHG Protocol's market-based method. Current Vietnamese regulations, including Decree 135/2024 for self-consumption rooftop solar and Decree 57/2025 enabling corporate DPPAs, provide the legal framework for these approaches, with I-RECs serving as the valid energy attribute certificates (Clear Guidance

for Direct Power Purchase Agreements in Vietnam - Tilleke & Gibbins, 2025; Abreo, 2024). The implementation can follow a practical 12-month build-out plan.

Phase 1 (0–3 months) involves initiating an ISO-style energy audit to establish the annual electricity (MWh) baseline. Concurrently, Fine Scandinavia should reserve roof area and begin pre-FEED (Front-End Engineering Design) for self-consumption rooftop PV, assuming no export to the grid (Abreo, 2024). Simultaneously, efforts should be made to screen potential DPPA counterparties (for wind or solar projects) and commence term-sheet negotiations (*Clear Guidance for Direct Power Purchase Agreements in Vietnam - Tilleke & Gibbins, 2025*). To bridge any initial gaps, securing an I-REC supplier is also crucial during this phase (Monsoon Carbon, 2025).

Phase 2 (4–9 months) focuses on tangible implementation. The rooftop PV system should be installed, typically sized to provide approximately 10–15% of the factory's annual electricity consumption, aligning with typical factory roof limits and Vietnam's new decree clarifying the legal basis for this model (Abreo, 2024). Following this, a Direct Power Purchase Agreement (DPPA) should be signed to cover an additional 10–15% of the annual electricity demand (*Clear Guidance for Direct Power Purchase Agreements in Vietnam - Tilleke & Gibbins, 2025*). This on-grid DPPA is now officially allowed by Decree 57/2025; careful attention should be paid to building curtailment and settlement terms due to recent tariff volatility (Reuters, 2025). Any remaining gap to reach the 30% renewable target for the first year should be covered by purchasing and retiring I-RECs in Fine Scandinavia's name.

Phase 3 (10–12 months) involves commissioning the newly installed PV system and performing a true-up of actual electricity consumption. I-RECs should then be retired to ensure the target of 30% renewable electricity is met and locked in (GHG Protocol, 2015). Finally, Fine Scandinavia should publish a Scope 2 note, clearly differentiating between location-based and market-based emissions as per the GHG Protocol (GHG Protocol, 2015). For quick sizing estimations, rooftop PV energy output is approximately 1,400–1,700 kWh/kWp-yr in Vietnam; to supply X MWh/yr from the roof, the capacity needed is roughly $X \div 1.5$ (kWp in thousands). DPPA volume would then be calculated as annual MWh multiplied by the target share, minus the MWh from PV and expected I-RECs.

B. Vietnam EPR: What You Must Do (Appliances + Packaging)

Vietnam's Extended Producer Responsibility (EPR) regulations, established under the Law on Environmental Protection 2020 and further detailed in Decree 08/2022 and its updates (including 2025 revisions), mandate that producers and importers meet specific recycling ratios for designated product groups and packaging (National Assembly of Vietnam & Government of Vietnam, 2022). Alternatively, they can make a financial contribution to the Vietnam Environmental Protection Fund (VEPF). Companies are required to register a recycling plan and submit a report by March 31st each year, with financial contributions typically due in April (end of Q1) for the preceding year. Recycling ratios vary, generally ranging from 0.5% to 22% depending on the product or packaging type (Tran et al., 2025). Specifically, Electrical & Electronic Equipment (EEE) categories, which include appliances, begin or expand from January 1, 2025, with typical ratios of around 5–10%, while packaging ratios commonly range from 10–22% based on material (*Vietnam Sets Comprehensive EPR Regulations for WEEE, ELV, Packaging and Batteries* | *Envilience ASIA*, n.d.).

A focused 90-day compliance plan should begin with a thorough **classification of products**. This involves mapping products like the Smart Multi-cooker, 5L Rice/Pressure Cooker, Variable-temperature Kettle, Air-fryer, and 5L Turbo-convection Oven to their appropriate EEE subgroups. All primary and secondary packaging must also be mapped by material type, such as paper/board, plastic, glass, and metal (Vietnam Environment Administration (VEA) & Ministry of Natural Resources and Environment (MoNRE), n.d.).

Next, Fine Scandinavia must choose a compliance path for each item: either organize recycling through authorized recyclers or a Producer Responsibility Organization (PRO), or opt to pay a financial contribution to the VEPF (Vietnam Investment Review, 2024). The financial contribution is calculated based on a formula using coefficients, with higher fees for items with low collection or recycling value. Many firms initially choose the financial contribution route for simplicity. It is crucial to register the annual plan and report on the MONRE EPR portal by March 31st, making any necessary payments by April (end of Q1) if the contribution route is chosen (Phuong et al., 2021). Maintaining auditable records of bills of materials, sales volumes, and packaging weights is essential.

Joining a PRO is highly recommended as it can leverage shared collection networks and verified recycling processes, potentially leading to lower unit costs over time (Chemlinked, 2023). For future years, designing for lower fees is a strategic move: increasing recycled content, simplifying packaging to mono-materials, labeling for easier disassembly, and improving

collection mechanisms can all reduce the adjustment coefficients in the fee formula (World Bank, n.d.). For illustrative EPR budgeting, the obligation in tonnes for each product or packaging category is calculated by multiplying the sales placed on the market (in tonnes) by the required recycling ratio (%) (World Bank, n.d.). If opting for a financial contribution, the fee is the obligation (t) multiplied by the unit recycling cost and an adjustment coefficient, which reflects the collection/recycling value by category (Vietnam Environment Administration & Ministry of Natural Resources and Environment, 2022). Companies should refer to the official table for exact SKUs and materials to determine precise costs.

C. Estimated Carbon Footprint Reduction (Scope 2)

Quantifying the carbon footprint reduction for Scope 2 emissions is crucial for demonstrating environmental progress. Fine Scandinavia should use Vietnam's latest official grid emission factor, which was 0.6592 tCO₂/MWh in 2023 (*Viet Nam's 2023 Updated Grid Emission Factor Signifies Lower Electricity Emissions – International Climate Initiative (IKI) in Viet Nam*, n.d.), though studies suggest it might be around 0.681 tCO₂/MWh in 2024. For conservative reporting until the official 2025 value is issued, it's advisable to use a range of 0.66–0.68 tCO₂/MWh.

The quick math for estimating annual Scope 2 reduction (market-based) is straightforward: it is approximately 0.66 tCO₂/MWh multiplied by the renewable share target (30%) of the total annual electricity consumption (E in MWh). For instance, if the annual electricity consumption (E) is 10,000 MWh/yr, the avoided emissions would be roughly 0.66 multiplied by 3,000 MWh (30% of 10,000 MWh), resulting in an avoidance of approximately 1,980 tCO₂e/yr (Abreo, 2024). If rooftop PV provides 1,500 MWh/yr (equivalent to about 1.0 MWp at 1,500 kWh/kWp-yr), this alone would avoid approximately 990 tCO₂e/yr, with the remaining reductions achieved through DPPA or I-RECs (Abreo, 2024). The specific PV yield (1,400–1,700 kWh/kWp-yr) should be adjusted based on Fine Scandinavia's specific site conditions (Abreo, 2024).

D. Marketing & Commercial Upside

Achieving these sustainability goals provides significant marketing and commercial advantages. Fine Scandinavia can make clear product-level claims such as "Manufactured with ≥30% renewable electricity (market-based, I-REC retired)," ensuring these claims align with the GHG Protocol for Scope 2 reporting and include certificate batch IDs and retirement dates for verifiability (GHG Protocol, 2015).

This commitment also enhances retail and B2B readiness. Many buyers, particularly those aligned with RE100 or SBTi initiatives, prefer documented renewable sourcing and EPR compliance (Mooldijk et al., 2024). Having robust DPPA and I-REC documentation strengthens responses to Requests for Proposals (RFPs) and can support participation in appliance trade-in programs, positioning Fine Scandinavia as a preferred supplier (Mooldijk et al., 2024).

Furthermore, these efforts build local credibility. Fine Scandinavia can publicly align itself with Vietnam's rooftop solar and DPPA policies, and publish an annual Energy & EPR Fact Sheet. This transparency reinforces their commitment to local sustainability efforts. The company can also craft a compelling risk buffering narrative, transparently explaining that their diversified approach (on-site PV, DPPA, and RECs) is a strategic move to manage Vietnam's evolving tariff landscape, thereby showcasing operational resilience to stakeholders.

IX. Technology Strategy & Information-System Specification

Fine Scandinavia's technology strategy for the Dat Cuoc project is to build a fully unified, data-driven digital ecosystem by deploying four core systems: ERP, CRM, WMS, and TMS. This integrated platform is designed to drive operational excellence, build a premium brand, optimize the supply chain, and provide a scalable foundation for future growth. The strategic role of each system is defined as follows:

- **ERP (Enterprise Resource Planning) – The Central Operational Backbone:** The ERP system will serve as the central nervous system for the entire operation, creating a single source of truth to integrate manufacturing (MES), procurement, inventory, and finance. Its primary role is to enable data-driven planning and ensure operational consistency.
- **CRM (Customer Relationship Management) – The Brand & Growth Engine:** The CRM is the primary driver for building a premium Nordic brand. It will manage B2B retailer relationships and capture end-customer feedback, providing critical insights for product improvement and targeted marketing campaigns.
- **WMS (Warehouse Management System) – The Inventory & Service Optimizer:** The WMS is crucial for achieving a Customer Service Level (CSL) of $\geq 95\%$ while minimizing capital tied up in inventory. It will execute advanced inventory strategies like VMI and dynamic slotting to manage high-value goods efficiently.
- **TMS (Transportation Management System) – The Logistics & Delivery Accelerator:** The TMS will create a responsive and reliable logistics network, ensuring the domestic

order-to-delivery target of ≤ 7 days is met. It will optimize routing, consolidate loads, and manage export complexities to lower costs and improve service.

To bring this technological vision to life, Fine Scandinavia will adopt a 'Buy-and-Partner' strategy not merely as a procurement method, but as a strategic framework for accelerating supply chain capability development. Instead of spending years developing systems internally (Build), the company will "Buy" best-in-class, proven software to rapidly acquire foundational capabilities in planning, inventory control, and customer management. Simultaneously, it will "Partner" with specialized local IT firms for customization and 3PL providers for logistics execution. This approach leverages deep external expertise, allowing Fine Scandinavia to achieve world-class operational performance faster while focusing on its core competencies in design and manufacturing. This hybrid model mitigates implementation risk, accelerates the deployment timeline, and ensures the technology directly enhances the resilience and efficiency of the entire supply chain.

To execute the technology strategy, the integrated ERP/SCM suite must deliver the following top eight functional requirements:

1. **Advanced Forecasting & Demand Planning (Priority: Critical):** The system must support a hybrid forecasting methodology, integrating long-term market CAGR data with short-term models like Exponential Smoothing and, eventually, Causal Analysis. It needs to effectively manage strong seasonal demand patterns, especially the Q4 peak, to drive all downstream planning.
2. **Material Requirements Planning (MRP) & Procurement (Priority: Critical):** A robust MRP module is required to translate the demand plan into precise procurement orders. It must be capable of managing long and variable lead times (from 3 to 8 weeks) for a complex Bill of Materials (BOM) and automating purchase order generation to ensure component availability for the production plan.
3. **Real-time MES & WMS Integration (Priority: High):** The suite needs seamless, real-time API connectivity to integrate with a Manufacturing Execution System (MES) on the factory floor and a Warehouse Management System (WMS). This is crucial for tracking production progress against the plan, ensuring accurate inventory data, and enabling dynamic warehouse operations like barcode/RFID scanning.
4. **Order Management System (OMS) with MTO Capability (Priority: High):** The system must feature a flexible OMS that can manage two distinct order flows: high-volume B2B

export orders and a low-volume, high-mix domestic Make-to-Order (MTO) model. This includes order capture, fulfillment logic, and direct-to-customer shipping coordination.

5. End-to-End Logistics & Shipment Tracking (Priority: High): A TMS-like functionality is required to provide visibility and control over the dual-pronged logistics network. It must manage different Incoterms (FCA, FOB, CIF, DAP), optimize routes from the factory to ports (Cat Lai/Cai Mep), and track shipments in real-time to ensure the ≤ 7 -day domestic delivery target is met.
6. Strategic Sourcing & Supplier Management (Priority: Medium): The system should include a module to manage the entire supplier lifecycle, from onboarding to performance evaluation. It must support the Kraljic Matrix classification (Bottleneck vs. Leverage), track supplier scorecards, and facilitate collaboration with partners through a supplier portal.
7. Sales & Operations Planning (S&OP) Workbench (Priority: Medium): To facilitate the monthly S&OP cycle, the system needs a collaborative workbench. This tool will allow stakeholders from sales, marketing, production, and finance to review forecasts, resolve imbalances between demand and supply, and arrive at a single consensus plan.
8. Quality & Sustainability Traceability (Priority: Medium): The suite must be able to capture and report on quality and sustainability data. This includes tracking material certifications (ISO, EUTR), supplier compliance (BSCI), and the data required for Vietnam's EPR reporting.

Implementation Roadmap & Details

The implementation will be executed over an 18-month period, divided into three distinct phases:

- Phase 1 (Months 1-6): Core Foundation & Planning
 - Focus: Establish the operational backbone.
 - Modules: Advanced Forecasting & Demand Planning (Req. 1), MRP & Procurement (Req. 2).
 - Activities: Final vendor selection, project kickoff, master data configuration (SKUs, BOMs, suppliers), and core financial setup.
- Phase 2 (Months 7-12): Shop Floor & Order Fulfillment Integration
 - Focus: Connect the digital plan to physical operations.
 - Modules: Real-time MES & WMS Integration (Req. 3), Order Management System (OMS) (Req. 4).

- Activities: Develop and test APIs, deploy barcode/RFID hardware, train production and sales staff, and go live with core manufacturing and order-to-cash processes.
- Phase 3 (Months 13-18): Optimization & Extended Visibility
 - Focus: Enhance control and collaboration across the extended supply chain.
 - Modules: Logistics & Shipment Tracking (Req. 5), Supplier Management (Req. 6), S&OP Workbench (Req. 7), Quality & Sustainability Traceability (Req. 8).
 - Activities: Integrate with 3PL and carrier systems, onboard core suppliers to the portal, configure S&OP workflows, and build out compliance and sustainability dashboards.

System	Strategy	Cost Estimate	Timeframe	Risk Level	Key Benefit
ERP	Buy (SAP Business One / Oracle NetSuite) + Local IT customization	USD 0.5–0.8M	12–18 mo	Medium	MES, SCM integration
CRM	Buy Cloud CRM (Salesforce / HubSpot)	USD 30–50k/ye ar	6–9 mo	Low	B2B & consumer engagement
WMS	Buy modular WMS + Partner with logistics for VMI	USD 80–150k	6–12 mo	Medium	Inventory optimization
TMS	Buy SaaS TMS + Partner with 3PL	USD 20–40k/ye ar	3–6 mo	Low	Lower transport cost, faster delivery

Table 9.1: System Implementation Details

X. Conclusion

This report has presented an integrated and actionable supply chain blueprint designed to empower Fine Scandinavia's strategic expansion into the competitive European market. The central challenge addressed is the critical need to evolve beyond current capabilities and construct a world-class operational framework that is not merely functional but serves as a core strategic asset. The recommendations detailed herein—spanning technology, planning, procurement, logistics, quality, and sustainability—are not standalone initiatives but deeply interconnected pillars designed to build a resilient, agile, and future-proof value chain.

The operational strategy is anchored by a sophisticated demand forecast that translates market analysis into a phased production ramp-up, culminating in an output of three million units by 2030. This forecast directly drives the Master Production Schedule, which in turn informs a meticulous purchasing strategy. Through a detailed Bill of Materials analysis and the application of the Kraljic and Supplier Preferencing matrices, this strategy ensures the secure supply of bottleneck components while optimizing costs for leverage materials. This complex flow of goods is supported by a resilient, dual-pronged logistics network that efficiently funnels components from a geographically dispersed supplier base and distributes finished products to both high-volume export gateways and a lean domestic Make-to-Order system.

This intricate operational flow is enabled and governed by two foundational pillars: an unwavering commitment to quality and a transformative investment in technology. The comprehensive Quality Management Plan embeds stringent EU regulatory compliance and premium brand standards into every stage of the value chain, from raw material verification to final product inspection. The entire framework is unified by an integrated ERP/SCM technology suite, which will act as the digital nervous system for the organization, ensuring end-to-end visibility and data-driven decision-making across all functions.

Ultimately, this plan transcends traditional operational efficiency. By embedding a proactive sustainability roadmap—targeting 30% renewable energy and ensuring full EPR compliance—and fostering deep, collaborative partnerships through a targeted supplier development program, Fine Scandinavia will transform its supply chain into a powerful source of competitive advantage. This approach reinforces the premium, responsible brand identity that is central to its market appeal. By methodically executing this multi-faceted strategy, Fine

Scandinavia will be equipped with a supply chain that is not only efficient and compliant but also agile, sustainable, and strategically aligned, positioning the company to successfully achieve its ambitious growth objectives and solidify its reputation as a global leader in the premium Nordic lifestyle sector.

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