



# ENVIRONMENTAL POLICY

Version 2/2025 VNG-ENV-EVT-PL-02  
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## **Environmental Policy**

### **Vanachai Group Public Company Limited and Subsidiaries**

Vanachai Group Public Company Limited and its subsidiaries (“the Company”) are committed to conducting business with environmental responsibility and strong corporate governance. The Company recognizes that its operations, products, and activities throughout the value chain may have environmental impacts. Therefore, environmental stewardship is considered a core element of its business mission, with a focus on minimizing negative impacts and generating positive outcomes for both society and the environment.

The Company places great importance on reducing environmental impacts, improving resource efficiency, and driving innovation in sustainable wood-based products. This Environmental Policy serves as a framework for integrating sustainability principles across all stages of the business, from responsible resource sourcing, efficient and eco-friendly production, and sustainable logistics, to end-of-life product management. The Company is committed to advancing the principles of the circular economy, supporting Thailand’s national climate goals, and aligning with international frameworks to create value while minimizing impacts across the entire value chain.

This policy is aligned with the Company’s **sustainability framework “FOREST | FUTURE | TOGETHER – for a Sustainable Living.”** It aims to embed environmental conservation and resource efficiency into corporate strategy, investment planning, operations, and product development for driving the organization toward a Circular Economy and Low-Carbon Economy. The Company is equally committed to transparent disclosure in accordance with international standards, ensuring responsible and sustainable growth while creating long-term shared value for society, the environment, and all stakeholders.

#### **1) Objectives**

- **Comply strictly** with all applicable environmental laws and regulations, including international obligations, and **integrate best practices** into all business activities.
- **Reduce environmental impacts** by enhancing performance across **energy efficiency, emissions, water, resource use, and waste management** throughout operations and the value chain, **aligned with science-based targets and international standards.**
- **Advance low-carbon production and environmental** performance to support Vanachai’s Net Zero greenhouse gas emissions target by 2050, in alignment with the Group’s climate and decarbonization roadmap, Thailand’s decarbonization direction, and evolving market expectations.
- **Promote the circular economy and green innovation** across the entire value chain, from design, production, and logistics to end-of-life product management, through

**eco-efficient manufacturing, environmentally friendly product development, and responsible resource management.**

- **Manage wastewater responsibly by monitoring and disclosing Chemical Oxygen Demand (COD) per tonne** of product, and ensuring treated effluent meets or exceeds **national and international standards.**
- **Protect biodiversity and ecosystems** by avoiding deforestation, safeguarding **high conservation value areas**, and delivering **net positive impacts** through **reforestation and restoration** initiatives.
- **Strengthen biodiversity conservation and sustainable forest management** across operations and the supply chain by promoting responsible, **traceable sourcing** of wood and other materials and **increasing the share of certified inputs** from credible standards.
- **Enhance green logistics** through **efficient route planning, reducing empty runs, improving fuel efficiency, and deploying technologies** that improve environmental performance.
- **Engage actively with stakeholders** including regulators, local communities, NGOs, and partners **to reduce biodiversity loss, prevent pollution, and promote sustainable development.**
- **Commit to continuous improvement through monitoring, reporting, and third-party verification** in line with **GRI standards, ISO 14001, and FTSE Russell ESG criteria.**
- **Report in accordance with GRI Standards** (GRI 102, 103, 301, 303, 306) to ensure **transparent and verifiable** disclosures.
- **Adhere to ISO 14001 Environmental Management System** principles to drive **continual improvement** and progress toward **international best practice.**

## 2) Policy Alignment

- **United Nations Sustainable Development Goals (SDGs):**
  - Goal 6 – Clean Water and Sanitation
  - Goal 7 – Affordable and Clean Energy
  - Goal 12 – Responsible Consumption and Production
  - Goal 13 – Climate Action
  - Goal 15 – Life on Land
- **Global Reporting Initiative (GRI) Standards:**
  - GRI 2-23 – Policy Commitment
  - GRI 2-24 – Embedding Policy Commitment
  - GRI 2-27 – Compliance with Laws and Regulations
  - GRI 3-3 – Management of Material Topics
  - GRI 301 – Materials

- GRI 302 – Energy (2016)
- GRI 303 – Water
- GRI 305 – Emissions (2016)
- GRI 306 – Effluents and Waste
- GRI 308 – Supplier Environment Assessment
- GRI 101 - Biodiversity 2024  
with future alignment to
- GRI 103 – Energy 2025
- GRI 102 – Climate Change 2025 from 1 January 2027.
- **ISO 14001 Environmental Management System**
- **FTSE Russell ESG Criteria:**
  - Energy (ECC31)
  - Pollution (EPR01)
  - Waste (EPR02)
  - Resource Use (EPR03)
  - Water (EWT13)
  - Biodiversity (EBD17, EBD02, EBD05, EBD06, EBD08, EBD09, EBD12 and EBD14,  
where applicable)
  - Water Quality and COD Disclosure: EWT43, EWT30 and EPR10, where applicable.
- **ISO 14064:** Greenhouse Gas Accounting and Verification Standards.
- Applicable **National and International Environmental Laws, Regulations and Requirements.**

### 3) Scope

This policy applies to:

- All business units and operations under the Company's operational control.
- All processes related to production, procurement, products, services, logistics, product distribution, and activities across the entire value chain.
- Suppliers, contractors, and logistics partners engaged in or associated with the Company's operations.

### 4) Definitions and References

- **Environmental Management:** A systematic approach to controlling and managing operations to prevent and reduce environmental impacts arising from the Company's activities.
- **Circular Economy:** An economic system that promotes the efficient use of resources by reducing waste, reusing materials, and maximizing recycling to minimize environmental impacts.

- **Energy Efficiency:** The optimal use of energy in production, logistics, and operations to achieve maximum output with minimum energy consumption.
- **Zero Process Waste to Landfill:** The management of production waste to ensure that no process waste is sent to landfills.
- **COD Load (Chemical Oxygen Demand):** A measure of the number of organic substances in wastewater, indicating the quality and efficiency of the plant's wastewater treatment process.
- **ISO 14001:** The international standard for Environmental Management Systems, designed to help organizations comply with regulatory requirements and minimize environmental impacts.
- **FTSE Russell ESG Indicators:** A set of global sustainability assessment criteria covering key areas including energy, pollution, waste, resource use, water management, and biodiversity.
- **Vanachai Integrated Materiality and Risk Assessment (V-IMRA)**  
An internal assessment process used by the Company to identify and prioritize sustainability-related issues by integrating impact and financial materiality perspectives, supporting enterprise risk management, strategic planning, and management decision-making.

## 5) Governance and Accountability

- **Board of Directors:** Approves the policy and oversees the Company's environmental strategy and performance.
- **Sustainability Committee:** Serves as the policy owner, reporting to the Board of Directors and the Managing Director, and is responsible for integrating environmental principles into business operations
- **Sustainable Development Task Force:** Reviews policy implementation, monitors progress, assesses environmental risks, and ensures alignment with international standards.
- **Management:** Implements action plans, monitors performance, and reports on environmental results and progress.  
**Senior Executive Accountability:** Environmental performance indicators are incorporated into executive Key Performance Indicators (KPIs) and remuneration systems.
- **Employees, Suppliers, and Partners:** Are expected to comply with this policy and actively contribute to continuous improvement in environmental performance.

## 6) Commitments and Principles

### 6.1 Energy Efficiency (ECC31):

- Manage energy efficiently across all operations and logistics by improving process and utilities efficiency, strengthening boiler, steam, compressor, motor, and heat recovery systems, and reducing energy losses across production lines.
- Improve energy intensity using GJ per tonne of production as the key performance indicator. The Group will restore and continue improving performance from the 2025 actual energy intensity of 3.57 GJ/tonne, benchmarked against the 2021 baseline of 3.99 GJ/tonne and the 2024 performance level of 3.24 GJ/tonne.
- Maintain a high share of renewable electricity and heat energy, building from 71.6% in 2025, and continue expanding feasible renewable and low-carbon energy options, including solar rooftop, biomass optimization, Green Tariff, and other credible low-carbon procurement mechanisms.
- Support the Group's Net Zero greenhouse gas emissions target by 2050 through energy efficiency, renewable energy, low-carbon manufacturing, and credible carbon management.

### 6.2 Pollution Management and Environmental Quality (EPRO1):

- Control and reduce air, water, and noise emissions to comply with national and international standards.
- Apply the Best Available Techniques (BAT) and environmentally friendly technologies throughout operations.
- Commit to the continuous reduction of emissions, including dust, VOCs, NO<sub>x</sub>, and SO<sub>x</sub>.
- Prevent chemical contamination and leakage in production processes.
- Continuously reduce pollution intensity to improve overall environmental performance.

### 6.3 Waste Management (EPRO2):

- Manage waste according to circular economy principles and the 6R approach in production: Reduce, Reuse, Recycle, Reject, Repair, and Recovery.
- Prevent waste at source, maximize recycling and reuse, recover value from production residues, and use suitable wood residues for biomass energy where technically feasible.
- Maintain 100% waste reduction or avoidance performance and maintain zero non-hazardous waste disposed by landfill.
- Recover at least 90% of hazardous waste through recycling, reuse, and energy recovery, while keeping final disposal at the lowest practical level through licensed and responsible waste management

**6.4 Resource Use (EPRO3):**

- Utilize wood-based raw materials and chemicals responsibly, with traceability, legal origin verification, and strict avoidance of natural forest wood.
- Maintain renewable and recyclable wood-based materials at not less than 95% of total materials used annually, including rubberwood, branches, stems, slabs, wood residues, and sawmill by-products.
- Reduce non-recyclable material intensity, including adhesives and treatment substances, through process optimization and material efficiency.
- Develop eco-friendly wood-based products that are durable, safe, forest-friendly, low in greenhouse gas emissions, and supportive of circular economy and sustainable packaging.

**6.5 Sustainable Water Management (EWT13, EWT43):**

- Promote efficient and responsible water use across all company facilities through site-level water balance, process efficiency, leakage prevention, rainwater storage, and water-use monitoring.
- Reduce water-use intensity year-on-year and restore performance through stronger process control, preventive maintenance, and factory-level water efficiency actions.
- Maintain zero water withdrawal or consumption from water-stressed areas.
- Increase wastewater recycling and reuse toward at least 90% by 2026 and maintain treated effluent discharge within applicable standards.
- Monitor and disclose water withdrawal, water use, wastewater reuse, treated discharge, water-stressed area exposure, and COD load intensity transparently.

**6.6 Wastewater Quality – Organic Load (EWT43):**

- Monitor, measure, treat, and disclose Chemical Oxygen Demand, or COD load intensity, in kg COD per tonne of production, covering relevant operating sites and maintaining multi-year data for performance tracking.
- Treat wastewater in compliance with the standards of the Pollution Control Department and applicable legal requirements before reuse or discharge.
- Continue reducing COD load intensity through wastewater treatment efficiency, process improvement, water reuse, and stronger site-level monitoring.

**6.7 Transportation and Logistics**

- Implement the Vanachai Logistics Project to enhance route efficiency, reduce empty truck runs, and integrate GPS tracking systems for monitoring and optimization.
- Strive toward eco-efficient transportation, reducing fuel consumption per trip and promoting low-emission logistics operations.

## **6.8 Biodiversity and No Deforestation**

- Promote the sourcing of wood-based raw materials from sustainable, traceable plantations to ensure responsible resource use.
- Support sustainable forest management (Sustainable Forestry) and the conservation of ecosystems within and around operational areas.
- Commit to zero deforestation and the protection of high conservation value (HCV) areas across all operations and supply chains.
- Strive to achieve a Net Positive Impact (NPI) on biodiversity through restoration and reforestation projects.
- Follow the mitigation hierarchy; Avoid, Minimize, Restore, and Compensate, to effectively manage and reduce biodiversity impacts.

## **6.9 Circular Economy and Eco Products**

- Design environmentally friendly, durable products for circularity and long-term use, while minimizing resource use and waste generation.
- Integrate circular economy principles into product design, production processes, packaging, logistics, and end-of-life product management.
- Develop eco-efficient wood-based products and product-level environmental information to support sustainable construction, low-carbon development, and future LCA / EPD readiness.
- Provide training and awareness programs where relevant to support circular economy practices across employees, suppliers, and business partners.

## **6.10 Supply Chain and Engagement**

- Require suppliers and contractors to comply with environmental standards consistent with this policy.
- Conduct audits and training programs for suppliers to promote continuous improvement in environmental performance.
- Monitor supplier performance in key areas such as energy use, waste management, water efficiency, and biodiversity conservation.

## **6.11 Stakeholder Engagement and Transparency**

- Provide training and awareness programs for employees and suppliers to strengthen environmental knowledge and responsibility.
- Collaborate with regulatory authorities, local communities, NGOs, and industry partners to promote environmental protection and sustainability.
- Publicly disclose environmental performance and progress on an annual basis to ensure transparency and accountability.

## 7) Environmental Risk and Impact Management

The risks, impacts, and dependencies associated with the matters addressed in this policy are identified, analyzed, and prioritized through the Company's Vanachai Integrated Materiality and Risk Assessment (V-IMRA) process. V-IMRA is an internal assessment framework that considers both impact materiality and financial materiality across the value chain.

- **The results of V-IMRA** are integrated into the Enterprise Risk Management (ERM) system to support policy formulation, strategic decision-making, the setting of risk appetite, and the creation of long-term sustainable value.
- **Identify and assess environmental risks** arising from production processes, waste management, and greenhouse gas emissions.
- **Apply ISO 14001 and the Company's Enterprise Risk Management framework** to identify, assess, manage and monitor environmental risks and impacts. Climate-related risks shall be assessed in alignment with TCFD / IFRS S2, while biodiversity and nature-related risks shall be assessed with reference to TNFD, GRI 101 and relevant biodiversity management approaches, where applicable.
- **Integrate environmental risk assessment results into the Company's enterprise risk management system** and long-term strategic planning to ensure proactive mitigation and resilience.

## 8) Targets and Metrics

- Achieve Net Zero greenhouse gas emissions by 2050, in alignment with the Group's Net Zero 2050 Roadmap and climate-related transition plan.
- Improve energy intensity using GJ per tonne of production as the key performance indicator, restoring and improving performance from the 2025 actual level of 3.57 GJ/tonne, benchmarked against the 2021 baseline of 3.99 GJ/tonne and the 2024 performance level of 3.24 GJ/tonne.
- Maintain a high share of renewable electricity and heat energy, building from 71.6% in 2025, while expanding feasible renewable and low-carbon energy options, including solar rooftop, biomass optimization, Green Tariff, and other credible low-carbon procurement mechanisms.
- Reduce water-use intensity year-on-year, maintain zero water withdrawal or consumption from water-stressed areas, and increase wastewater recycling and reuse toward at least 90% by 2026.
- Monitor and continuously improve COD load intensity, expressed as kg COD per tonne of production, and disclose performance annually.

- Maintain 100% waste reduction or avoidance performance, maintain zero non-hazardous waste disposed by landfill, and recover at least 90% of hazardous waste through recycling, reuse, and energy recovery.
- Maintain renewable and recyclable wood-based materials at not less than 95% of total materials used annually, strengthen traceability and proof of origin, and ensure responsible sourcing with no natural forest wood accepted in the procurement system.
- Maintain 100% biodiversity policy coverage and 100% biodiversity risk assessment coverage across defined operating sites, while progressing restoration and conservation of green areas toward the Group's biodiversity target.
- Publicly disclose progress on energy, water, wastewater, waste, pollution, resource efficiency, biodiversity, and climate-related performance annually through the Vanachai Sustainability Move Report and relevant communication channels.

## 9) Supply Chain and Sustainable Procurement

- Require all suppliers to strictly comply with the Company's environmental and energy management standards.
- Encourage suppliers to establish ISO 14001-compliant Environmental Management Systems (EMS) and reduce greenhouse gas emissions in their production processes.
- Procure raw materials and products from traceable, sustainable sources that are not associated with deforestation.
- Conduct annual environmental performance assessments and monitoring of suppliers to ensure continuous improvement and compliance.

## 10) Integration with Corporate Sustainability Strategy

- **FOREST:** Conserve and restore forest ecosystems through the use of sustainably sourced wood and by expanding green areas within operational sites.
- **FUTURE:** Develop clean technologies and low-carbon innovations in wood-based product manufacturing to drive the circular economy.
- **TOGETHER:** Foster collaboration with communities, government agencies, and industry partners to elevate shared standards in environmental management.

## 11) Implementation and Supporting Resources

- Integrate this policy into the Company's Environmental Management System (EMS) in accordance with ISO 14001 standards.
- Provide training and awareness programs for employees and suppliers to enhance understanding and commitment to environmental impact reduction.

- Allocate adequate budget, personnel, and technology resources to support the effective and continuous implementation of environmental initiatives.

## **12) Monitoring, Reporting and Transparency**

- Monitor and report environmental performance annually through the Vanachai Sustainability Move Report.
- Ensure that all environmental data – including energy, water, waste, and pollution metrics, undergo third-party verification to guarantee accuracy and credibility.
- Disclose progress toward environmental targets and key performance indicators (KPIs) transparently to the public on a regular basis.

## **13) Review and Continuous Improvement**

- Review this policy every two years, or earlier if required due to changes in legislation, standards, or stakeholder expectations.
- Update and align the policy with emerging technologies and international frameworks such as FTSE Russell ESG, GRI Standards, and ISO 14001.
- Promote research, innovation, and cross-functional collaboration to continuously enhance environmental performance and long-term sustainability.

#### 14) Environmental Policy Revision History

Version	Date	Policy Owner	Approved by	Key Changes / Comments
1.0	11 November 2024	Sustainable Development Task Force	Board of Directors	Initial Environmental Policy focusing on compliance, GHG reduction, eco-products, resource efficiency.
2.0	11 November 2025	Sustainability Committee	Board of Directors	Revised the policy to align with FTSE Russell ESG criteria, adding commitments related to Energy (ECC31), Pollution (EPR01), Waste (EPR02), Resource Use (EPR03), Water Management (EWT13), and COD Load Disclosure (EWT43). The update also strengthens focus areas on Biodiversity, Green Transportation, R&D investment, ISO 14001 certification, and Stakeholder Engagement, while integrating these with the Company's Corporate Sustainability Strategy.

This policy is approved and issued for acknowledgement and implementation by all relevant parties.