

**ENNOCONN CORPORATION**

# **Green Product Design and Development Code**

**Policy Document**

## **Revision History**

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# 1. Purpose and Scope

## (1) Purpose

This Code is established so that Ennoconn Corporation (the “Company”) systematically integrates environmental and sustainability considerations into product design and development, and embeds green design principles into full product lifecycle management. By combining regulatory compliance, customer requirements, and engineering practice, the Company seeks to reduce the environmental impacts of products and related processes, improve resource and energy efficiency, and support the Company’s sustainable development strategy, product stewardship approach, and environmental, social, and governance (ESG) management objectives.

## (2) Scope of Application

This Code applies to all categories of products and key modules designed, developed, manufactured, or outsourced by the Company, and serves as a common set of principles for relevant functions during the stages of product planning, design, procurement, manufacturing, and supply chain management.

The scope includes projects and cooperation models such as original design manufacturing (ODM), joint design manufacturing (JDM), and original equipment manufacturing (OEM), all of which shall be brought within the management scope of this Code.

### **(3) Definition of Green Products**

Green products are products that, while meeting technical, safety, functional, and market requirements, integrate environmental considerations from the design stage onward and across all lifecycle stages, including raw material sourcing, manufacturing, use, maintenance, recovery, and disposal. Guided by the 4R principles of **Reduce, Reuse, Recycle, and Regeneration**, green products are intended to reduce adverse environmental impacts and improve resource and energy efficiency.

## **2. Organizational Roles and Responsibilities**

### **(1) Design and R&D Functions**

Design and R&D functions shall incorporate the green design principles described in this Code into the product development process. Key responsibilities include:

1. Evaluating potential environmental risks and improvement opportunities during product architecture, material selection, and process planning.
2. Ensuring that product designs comply with applicable environmental regulations, customer specifications, and internal Company requirements.
3. Collaborating with relevant functions to advance design solutions that improve product environmental performance.
4. Conducting periodic training to strengthen R&D personnel's capabilities in sustainable material selection and sustainability risk identification, and to

clarify their roles and responsibilities in product environmental performance and regulatory compliance.

## **(2) Procurement and Supply Chain Management Functions**

Procurement and supply chain management functions shall ensure that raw materials and suppliers satisfy the Company's environmental and compliance requirements. Key responsibilities include:

1. Establishing baseline requirements for supplier environmental management and regulatory compliance.
2. Supporting the collection and management of material composition information, declarations of conformity, and related supporting documentation.
3. Effectively communicating customer and Company environmental requirements throughout the supply chain.
4. Providing periodic training for procurement and supply chain personnel on sustainable material sourcing, sustainable procurement strategies, and first-line compliance awareness.

## **3. Product Design and Development Principles**

This section sets out the Company's core principles for green product design and development. Product development shall be based on lifecycle thinking and integrated with engineering concepts such as design for manufacturability, repairability,

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upgradeability, and recyclability, while also taking into account product reliability, information security, regulatory compliance, and actual application requirements, so as to reduce environmental impacts across the full product lifecycle.

## **(1) Lifecycle Thinking and Design Decision-Making Principles**

When conducting green product design and development, the Company shall apply life cycle thinking, systematically identifying the principal environmental impacts of products across stages including raw material acquisition, manufacturing, transportation, use, end-of-life treatment, and recovery, and using such analysis as a basis for design decisions and development management.

Each development function shall, as appropriate to the nature of the product, review energy and resource consumption and assess key environmental impact categories, including:

1. Resource-related aspects, such as water use and depletion of abiotic resources, including minerals and fossil fuels;
2. Ecological aspects, such as global warming potential, acidification, and eutrophication; and
3. Human health aspects, such as particulate matter and potential human toxicity indicators.

Depending on product type, development complexity, customer requirements, and risk level, the Company may apply either a full life cycle assessment (Full LCA) or a simplified life cycle assessment (Simplified LCA).

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Where a Simplified LCA is applied, the assessment shall focus on identifying key environmental factors, major environmental hotspots, and material data gaps, and shall serve as a supporting input to product development and design decision-making, provided that reasonable assessment reliability is maintained.

During green design decision-making, development teams shall evaluate environmental benefits together with product performance, reliability, information security, and regulatory compliance, and perform an integrated review of low-impact materials, modular design, disassembly, repairability, upgradeability, and recycling feasibility.

Where design decisions involve customer specifications, product functionality, material limitations, or other contractual requirements, the development team shall confirm such trade-offs with the customer to ensure that the balance between environmental indicators and product performance is reasonable and that product quality and use-related risks remain within a controllable range.

Because different project cooperation models involve different degrees of control over product definition, design leadership, material selection, structural design, and manufacturing control, each function shall define the applicable items, implementation depth, review responsibilities, and evidentiary documentation requirements under this Code based on the project's actual controllable scope, customer authorization boundaries, and contractual responsibilities, using a graded management approach.

## **1) ODM Projects**

For ODM projects in which the Company leads product design and development, all requirements of this Code shall in principle apply in full, including lifecycle thinking,

material and component selection, structural compatibility, modular design, disassembly, energy-efficient design, circular design, and manufacturing-stage waste reduction, energy efficiency, and hazardous substance management.

## **2) JDM Projects**

For JDM projects involving joint design by both parties, the Company shall still promote the green design requirements set out in this Code. Matters subject to joint decision-making shall be clearly defined through design review, specification freeze, bill of materials (BOM) approval, or other milestone approval mechanisms, including division of responsibilities, implementation items, approval authority, and exception handling, with relevant records retained to ensure traceability and verifiability.

## **3) OEM Projects**

For OEM projects in which the customer leads product design, the Company's influence over product architecture, material substitution, design for disassembly, and circular design may be limited. Relevant design requirements shall therefore be implemented according to the customer's authorization and the agreed project scope. Nevertheless, this Code shall still be applied rigorously to supply chain management, material regulatory compliance, collection of material composition information, management of declarations of conformity, packaging management, manufacturing process improvement, and improvement of material, water, and energy efficiency and hazardous substance reduction during production.

ODM, JDM, and OEM projects shall all be included within the management scope of this Code, but their compliance boundaries shall be distinguished as follows:

1. ODM — full compliance
2. JDM — shared compliance
3. OEM — priority compliance

Relevant functions shall establish project-type-specific compliance matrices as the basis for project reviews, design change management, milestone approvals, internal audits, and management reviews.

## **(2) Material and Component Selection Principles**

Product design shall prioritize evaluation of the environmental impacts of materials and components and, based on environmental and social product requirements and supply feasibility, assess raw material priorities in accordance with the following principles:

1. Where feasible, prioritize recycled content, regenerated materials, third-party-certified sustainable raw materials, or other materials with lower environmental impact, while assessing potential effects on product quality, reliability, and supply chain stability.
2. Ensure that all materials and components comply with applicable environmental regulations, such as RoHS and REACH.
3. Collect and retain, according to product characteristics, material composition information, declarations of conformity, and/or relevant test reports.
4. Avoid, in accordance with Company policy, the use of conflict minerals sourced from high-risk areas.

### **(3) Structural and Compatibility Design Principles**

Product structure shall be designed with due consideration for functionality, safety, and downstream treatment requirements. The guiding principles include:

1. Simplify the number of parts and structural complexity without compromising product performance.
2. Prioritize standardized or common components and fastening methods to facilitate assembly, maintenance, and disassembly.
3. Mark plastic parts in accordance with applicable standards to improve recycling and sorting efficiency.
4. Prioritize mono-material design where feasible; where composite materials are necessary, consider their separability.

### **(4) Modular and Design for Disassembly Principles**

To extend product life and improve maintenance and recovery efficiency, product design shall follow the principles below:

1. Adopt modular design architecture so that key functional units can be independently repaired, replaced, or upgraded.
2. Prioritize reversible joining methods and reduce the proportion of inseparable structures.
3. Ensure that product structures can be disassembled within a reasonable amount of labor time and with limited tools.
4. Where inseparable design is necessary, retain clear structural instructions or separation methods.

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## **(5) Energy and Resource Efficiency Design Principles**

Product design shall take into account energy and resource efficiency during the use phase. The guiding principles include:

1. Reduce energy consumption under actual application scenarios through system architecture choices and component selection.
2. Prioritize high-efficiency power supplies and low-power components.
3. Assess the effects of design options on overall resource efficiency and avoid unnecessary material waste.

## **(6) Recycling and Circular Design Principles**

To improve end-of-life recovery and reuse value, product design shall consider the following:

1. Reduce the complexity of material types and surface treatments so as not to impair recycling quality.
2. Minimize unnecessary coatings, electroplating, and additives.
3. Assess the recyclability and reuse potential of major materials after product retirement.

## **4. Manufacturing and Production Stage Principles**

During manufacturing and production, the Company shall reduce environmental impacts through process management and continual improvement. Key principles include:

1. Reduce the consumption of materials, water resources, and energy through process optimization.
2. Promote energy-efficient equipment, waste heat recovery, and related improvement measures.
3. Introduce or use renewable energy within feasible operational conditions.
4. Avoid or reduce the use and emission of hazardous substances during manufacturing processes.
5. Apply appropriate packaging and packaging reduction principles, and prioritize recyclable or degradable materials.

## **5. Product Use and Service Stage**

During the product use and service stage, the Company shall aim to extend product life, improve overall use efficiency, and reduce environmental impacts associated with use and service activities. This includes:

1. Reducing the risk of whole-unit replacement through durable design and modular architecture.

2. Supporting product repair, upgrades, and component replacement so as to extend service life.
3. Enhancing resource efficiency, where appropriate to product characteristics, through system integration and service models.
4. Optimizing delivery lead times and transportation routes during product delivery and service, and evaluating lower-carbon transportation options where feasible, in order to reduce transportation-related environmental impacts.

## **6. End-of-Life Recovery and Responsibility Management**

### **(1) Recycling and Reuse**

Product design shall facilitate downstream recycling and treatment. The guiding principles include:

1. Improving the feasibility of product disassembly and material sorting.
2. Ensuring that major materials and components retain recovery and reuse value.

### **(2) Extended Product Responsibility**

The Company shall fulfill its responsibilities related to product take-back, recycling, and regeneration in accordance with applicable regulations, such as the WEEE Directive, and shall provide product structural or material information when necessary to support proper recycling treatment and resource reuse.

## 7. Reference Standards and Documents

1. **ISO 14006:2020** — *Environmental management systems — Guidelines for incorporating ecodesign*
2. **IEC 62430:2019** — *Environmentally conscious design (ECD) — Principles, requirements and guidance*
3. **Directive 2011/65/EU (RoHS)** — *Restriction of the use of certain hazardous substances in electrical and electronic equipment*
4. **Regulation (EC) No 1907/2006 (REACH)** — *Registration, Evaluation, Authorisation and Restriction of Chemicals*
5. **Directive 2012/19/EU (WEEE)** — *Waste electrical and electronic equipment*

**President Nelson Tsay**

