5 Green Products and Innovation

5.1 Green Design

5.2 Circular Economy

5.3 Product Quality and Responsibility

5.4 Product Carbon Footprint



Performance Results

R&D expenditure in the past four years

NTD 80 billion

Completed carbon footprint calculations for **11** products (cradle to gate)

Frame Tray recycling

100%

PET film material recycling has been

100% implemented

Simplo Technology complies with international standards and meets customer requirements for green products. We are fully committed to manufacturing products that meet environmental standards and reduce greenhouse gas and wastewater emissions, waste generation and chemical use to improve our ecological benefits and protect the environment. Simplo Technology's R&D expenditure in 2025 is 2,141,911 thousand dollars, accounting for 2.61% of revenue, continue to invest in the research and development of new technologies and products to maintain our competitiveness in the market.

R&D expenditure and results over the past three years:

Year	R&D Expenses (NT$ thousands)	Sales (%)	Major Achievements
2022	2,130,944	2.23	1. Panel migration and recognition automation equipment. 2. Energy Management and Monitoring System (EMS) integration and development. 3. Completed UL9540A safety certification for energy storage system.
2023	1,946,085	2.29	1. Research on dynamic capacity estimation algorithm for high voltage, high-power battery systems (using EKF method). 2. Research on static capacity calibration algorithm for high voltage, high-power battery systems.
2024	1,823,985	2.28	1. Development of online automatic calibration device and method for high-voltage, high-power battery backup system. 2. High-power battery sampling current detection board.
2025	2,141,911	2.61	1. Technical evaluation research on the architecture (action, protection scenarios, safety tripping) of high-voltage, high-power battery backup system. 2. Research on electric field and insulation risk simulation and evaluation of high-voltage, high-power battery backup system. 3. Development of hardware circuitry and firmware for high voltage, high-power battery backup system.

Source: Simplo Technology 2025 Annual Report, P.3

5.1 Green Design

Definition of "Design for Environment (DfE)": "Systematically considering the design performance in environmental, health, and safety objectives throughout the entire product and process lifecycle". Also known as green design and environmental design, Simplo Technology employs product lifecycle thinking to constantly enhance product value during the R&D phase. Simultaneously aiming to reduce resource waste and environmental impact, the Company enhances green competitiveness through the development of green products.

1. **Raw material management - environmentally friendly**
   Use of recycled materials (recycled cobalt, low-cobalt design, PCR recycled materials)
   evaluation of alternative materials (cobalt reduction, cobalt-free batteries)
   recycled-cobalt design being introduced into mass-production application, low-cobalt design being introduced into design/mass-production application.
2. **Green manufacturing**
   ISO 14001 environmental management system, ISO 14064-1 GHG inventory, ISO 50001 energy management system, UL2799 zero waste to landfill
3. **2026 lead-free substitution transition plan to be introduced, in compliance with RoHS requirements**
4. **Distribution and transportation: Packaging material recycling, green transportation**
5. **Use stage: Product energy consumption, safety during use**
6. **Scrap and recycling: Disassembly, recycling and reuse**

5.2 Circular Economy

Material Topics | Circular Economy

Introduce recycled plastic

In the past three years, Simplo Technology has collaborated with suppliers on recycled plastics, verifying post-consumer recycle material (PCR) from as many as 14 suppliers. Our products are certified with UL Yellow Card for fire protection and international authority for recycled content to ensure the quality and reliability of plastic materials. We will continue to cooperate with our customers and suppliers in the future to maximize the benefits of the circular economy.

According to the life-cycle assessment (LCA) data provided by suppliers, using 90 to 98% PCR plastic pellets is expected to reduce 49 to 90% of carbon emissions compared to using non-recycled plastic materials. Using recycled materials not only decreases the consumption of natural resources but also brings significant environmental benefits and contributes to the circular economy.

Introduction of Recycled Materials in Battery Modules and Current Mass-Production Status

In putting the circular economy into practice, Simplo Technology has been actively researching and developing recycled materials for battery modules and has successfully introduced them into mass production. Many of our suppliers' recycled materials have obtained third-party certifications, such as UL (Underwriter Laboratories Inc) recycling certification, TÜV (Technischer Überwachungsverein) recycling certification, SCS (Science Certified System Global Services) recycling certification, and GRS (Global Recycled Standard) recycling certification.

1	PET (polyethylene terephthalate) film	Currently using 100% recycled material by weight, already introduced into customer mass-production products.
2	Copper in battery electrode tabs and PCBA	Currently using 100% recycled material by weight, already introduced into customer mass-production products.
3	Solder paste	Currently using 100% recycled material by weight, already introduced into customer mass-production products.
4	PC (Polycarbonate) plastic	Depending on the customer, currently using 30%/50%/90%/97%/98% recycled material by weight, already introduced into customer mass-production products. To meet future PFAS (Per- and polyfluoroalkyl substances) regulatory requirements for PC plastic, material R&D and validation are underway; preliminary material verification and testing have been completed for PFAS-free formulations with 50% and 92% recycled content.PC(Polycarbonate)
5	PC (Polycarbonate) film	Currently using 60% and 90% recycled material by weight, already introduced into customer mass-production products.

Tray recycling

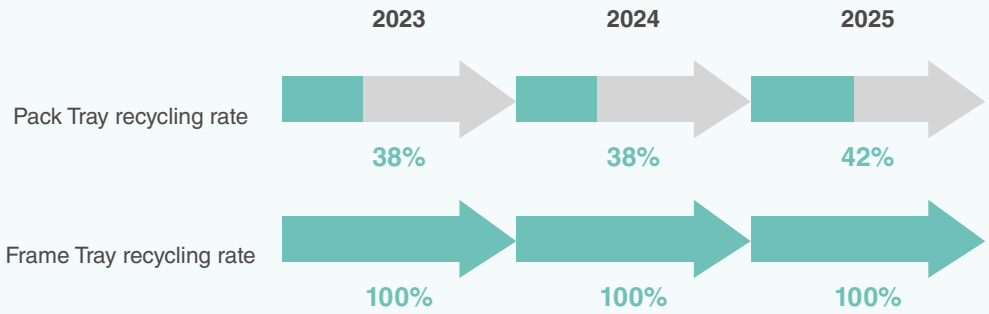
In order to reduce the amount of waste produced during the manufacturing process, we start from Tray recycling, including Pack and Frame Tray recycling.

Battery modules are provided to customers in Pack Tray. After receiving the battery module, the customer recycles the battery Tray to the entrusted recycling plant; the recycling plant inspects the recycled Pack Tray and then transports the reusable battery Tray back to Simplo Technology for reuse. The recycling volume was 17,058,550 PCS in 2023, 16,704,847 PCS in 2024, and 18,658,510 PCS in 2025. The Pack Tray recycling rate rose from 38% in 2023 to 42% in 2025, reflecting stronger circular-economy performance through a higher proportion of reuse. When a Pack Tray fails inspection at the recycling plant, it is entrusted to the recycling plant for disposal and use as secondary material.

After the upstream supply chain receives the Frame Tray, it recycles the Frame Tray and sells it to a recycling plant; after the recycling plant inspects the recycled Frame Tray, the supplier purchases reusable Frame Tray packaging products and ships them for reuse. In 2025, a total of 490,000 PCS were put into recycling, gradually implementing the circular economy.

Year	2023			2024			2025		
	Consumption	Recycling Volume	recycling rate	Consumption	Recycling Volume	recycling rate	Consumption	Recycling Volume	recycling rate
Pack Tray (pcs)	44,961,975	17,058,550	38%	44,473,142	16,704,847	38%	44,394,646	18,658,510	42%
Frame Tray (pcs)	12,000	12,000	100%	252,000	252,000	100%	490,000	490,000	100%

Tray recycling rate




Pack Tray


Frame Tray

Data scope: Simplo Chongqing and Simplo Changshu

Cobalt recycling

Cobalt is one of the elements used as a positive electrode material in lithiumion batteries, accounting for approximately a quarter of the total battery cell weight (the exact proportion varies depending on the positive electrode material used). In recent years, geopolitics has also driven cobalt prices steadily higher, making cobalt a strategic material; lithium battery recycling in the market is now in a key transition period, shifting from "waste disposal" to "resource refining." Most of Simplo Technology's customers regard cobalt recycling as an important issue. In 2025, we partnered with 4 battery cell suppliers to pass the UL 2809 Environmental Claim Validation Procedure (ECVP) for Recycled Content, verifying that post-consumer recycled cobalt content in battery cells reached 100%, mainly for use in notebook computer battery module products, continuing our progress toward a circular economy. In 2025, a total of 6,366,695 PCS of battery modules containing recycled cobalt were shipped, using a total of 320,448 kg of recycled cobalt.

Currently using 50% and 100% recycled material by weight, already introduced into customer mass-production products. Because cobalt accounts for approximately 21-27% of the total weight of a battery module, the use of recycled cobalt in calculating the overall battery recycling rate is a major milestone. Using 50% recycled cobalt, combined with contributions from other recycled materials, the overall recycled content of battery modules can reach 19-26%. Using 100% recycled cobalt, the recycled content of battery modules can reach as high as 38%.



5.3 Product Quality and Responsibility

Material Topics | Product Quality and Responsibility

Hazardous Substance Management

Simplo Technology has established a Green Product Management Platform (Supplier Relationship Management, SRM), which uses a product component approval mechanism and a green product survey process to implement source management of raw materials across the supply chain and strengthen product environmental compliance.

To continuously enhance the platform's functionality and control capability, the Company has completed a system upgrade, introducing the latest environmental regulatory control standards and adding an FMD (Full Material Declaration) material-content comparison and limit-control mechanism. When a material's content exceeds the system-defined limit, the supplier must proactively select an applicable regulatory exemption clause; if no supporting basis is provided, the system will automatically classify the part as non-compliant and halt the subsequent review process.

Through the FMD control mechanism and suppliers' complete and transparent disclosure of material composition, the Company is able to precisely track the material composition of its products, effectively preventing materials that do not comply with environmental regulations from entering the manufacturing process, and ensuring that products meet international environmental standards and customers' green product requirements. This not only improves the transparency and traceability of supply chain environmental management, but also demonstrates the Company's proactive commitment and management effectiveness in sustainable development and environmental responsibility.

Hazardous Substance Reduction Policy

Simplo Technology continues to promote and formulate hazardous substance reduction policies, focusing on the potential environmental impact of persistent, bioaccumulative, and toxic substances, as well as the potential risks that carcinogenic, mutagenic, reprotoxic, and endocrine-disrupting substances pose to human health and reproductive safety. The Company actively implements product environmental compliance and sustainable development goals through the introduction and strict control of alternative materials, ensuring that material selection balances environmental friendliness, application safety, and product performance.

In response to the potential risks of RoHS Directive lead (Pb) exemption materials and per- and polyfluoroalkyl substances (PFAS), the Company's R&D team has worked closely with suppliers and has successfully introduced lead-free and PFAS-free alternative materials into electronic components and other key materials. These alternative materials are currently in the final testing and validation stage; once validation is passed, they will be applied to products, effectively reducing environmental and health risks.

Hazardous Substance Control Process

Simplo Technology places great importance on product environmental safety and regulatory compliance, and continues to promote its Hazardous Substance Management (HSM) system, incorporating environmental risk management into product lifecycle management. All major manufacturing sites have obtained IECQ QC 080000 hazardous substance process management system certification, establishing a systematic hazardous substance control mechanism to ensure that products meet international environmental regulations and customers' green product requirements.

To implement hazardous substance control and ensure product environmental compliance, Simplo Technology has established the following management process:

Regulatory Monitoring and Standard Setting

Continuously track global environmental regulations and customer requirements, and establish internal hazardous substance management standards and limit-control mechanisms, ensuring that policies and operations comply with the latest regulatory requirements.

Supplier Environmental Management

Require suppliers to provide complete material composition information (FMD / SDS / test reports) and incorporate it into the supplier evaluation and management system, strengthening supply chain environmental compliance.

Material Composition Review and System Comparison

Compare and check material composition against limits through the green product management platform, ensuring that raw materials introduced into products comply with relevant regulations and Company standards.

Testing and Verification Management

Based on the risk level of raw materials, incoming materials are spot-checked for hazardous substances using X-ray Fluorescence (XRF) analysis, enabling real-time identification and control of potentially risky materials. In addition, the Company regularly conducts third-party testing and internal verification of finished products to ensure that all materials comply with international environmental regulations and customers' green product requirements. Through this institutionalized testing and verification process, the Company can effectively track material composition and chemical substance risks, ensuring that production and shipment comply with environmental safety standards throughout.

Continuous Improvement and Training

Through internal audits, supplier communication, and participation in training courses on hazardous substance management, environmental regulations, and green product standards regularly held by partner manufacturers, the Company strengthens employees' and suppliers' understanding of the latest regulatory requirements and management processes. This ensures that every stage can respond promptly to regulatory changes and implement management measures, continuously improving hazardous substance management capability.

Halogen-Free Product Management

Halogen-free electronic and electrical products have become a global development trend, with the main goal of reducing or eliminating the use of halogen substances that pose potential hazards to the environment and human health, particularly brominated flame retardants (BFRs), chlorinated flame retardants (CFRs), and polyvinyl chloride (PVC) and related compounds.

To reduce the potential impact of products on the environment and human health, Simplo Technology actively promotes a Halogen-Free product management policy. In line with electronics industry standard definitions, the Company has established control mechanisms for halogen substances such as chlorine (Cl) and bromine (Br), and ensures that product materials meet halogen-free requirements through material review and a supply chain information disclosure system, progressively improving the environmental friendliness of its products.

In terms of management mechanisms, Simplo Technology requires suppliers to provide complete material composition information (Full Material Declaration, FMD) and third-party test reports at the product introduction stage, and compares and reviews substance content through a systematic management platform. When the halogen substance content in a material exceeds the Company's control limit, the supplier must propose improvement measures or alternative material solutions; parts that fail to meet the relevant requirements will not be permitted to enter the product design and manufacturing process.

In terms of process management, the Company has strengthened incoming quality control (IQC), using X-ray Fluorescence (XRF) equipment to screen and inspect incoming materials, confirming that they meet the Company's halogen-free management standards before they can be put into production and processing. At the same time, the Company avoids contamination from material mix-ups during the manufacturing process through clear material labeling and segregated production management, ensuring that products comply with halogen-free and related environmental regulatory requirements.

Full material disclosure (FMD)

Since 2016, Simplo Technology has been moving towards proactive material management and adopting the Full Material Disclosure (FMD) action. FMD helps to build trust, promote industry standards, and address consumer concerns about sustainability and health issues, which are part of corporate social responsibility and sustainable development.

EU chemical policy (REACH)

REACH stands for Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH). As the name suggests, this directive requires chemical products entering the European market need to undergo registration, evaluation, authorization, and restriction based on their import status.

Simplo Technology has established management and control procedures, conducted supply chain risk assessment, and participated in supplier conferences organized by customers to ensure that the flow of value chain information meets relevant requirements.

EU RoHS directive

Simplo Technology's main manufacturing plant has implemented the IECQ QC080000 hazardous substance process management system since 2012 and obtained international certification. In addition to controlling raw material input according to RoHS processes, we occasionally conduct RoHS compliance testing on finished products. All products meet RoHS directive requirements, and to date, there have been no RoHS violations or customer coplaints.

Per- and polyfluoroalkyl substances (PFAS)

In response to the US "PFAS Management Action Plan" and the EU REACH-related requirements, Simplo Technology has incorporated these regulations into the Hazardous Substance Management Regulations for material control. Regarding the PFAS-related information of our products, we also work with manufacturers to seek fluorine-free alternative materials or improve process technology, striving to achieve green products with consistent regulations and quality, and reduce risks to the environment and human health.

Product safety

Simplo Technology strictly complies with each country's safety regulations for its lithium battery products, and additionally meets even more stringent safety and performance requirements set by individual customers. Products undergo multiple rounds of safety testing and performance verification before being submitted to customers. The main globally recognized safety regulations include the following:

- International safety regulations (e.g. IEC 62133-2, IEC 62368-1, IEC 62619, ISO 6469-1, etc.)
- European safety regulations [e.g. EN 62133-2, IEC 62368-1, 2014/35/EU LVD (Low Voltage Directive), (EU) 2023/988 GPSR (General Product Safety Regulation), etc.]
- North American safety regulations [e.g. UL 2054, UL 62133-2, UL 62368-1, ANSI/CAN/UL 1973, ANSI/CAN/UL 9540(A)]
- Mainland China safety regulations (mandatory CCC certification related to GB 31241).
- Safety regulations in Taiwan, Japan, Korea, India, and ASEAN countries mostly follow IEC 62133-2.
- nternational transport regulations UN 38.3, etc.

Regarding the EU's new Battery Regulation (EU) 2023/1542, which has taken effect and is being phased in, it imposes more comprehensive and specific requirements on the durability, sustainability, environmental performance, and safety of battery products, including restrictions on the use of certain substances, QR codes, and requirements for end users to easily remove and replace batteries, enhancing protection for consumers, the environment, and the planet.

Simplo Technology has a dedicated safety regulatory compliance department and a laboratory that has passed the ISO/IEC 17025 (CNS 17025) certification of the Taiwan Accreditation Foundation (TAF). As the Group's business continues to expand, a newly established high-energy battery testing laboratory has also officially begun operations and obtained TAF ISO/IEC 17025 certification in 2025, progressively increasing verification capability and certification scope to enable more comprehensive self-verification and strengthen the safety of the full range of battery products.



SMP Conflict Minerals' Procurement Policy

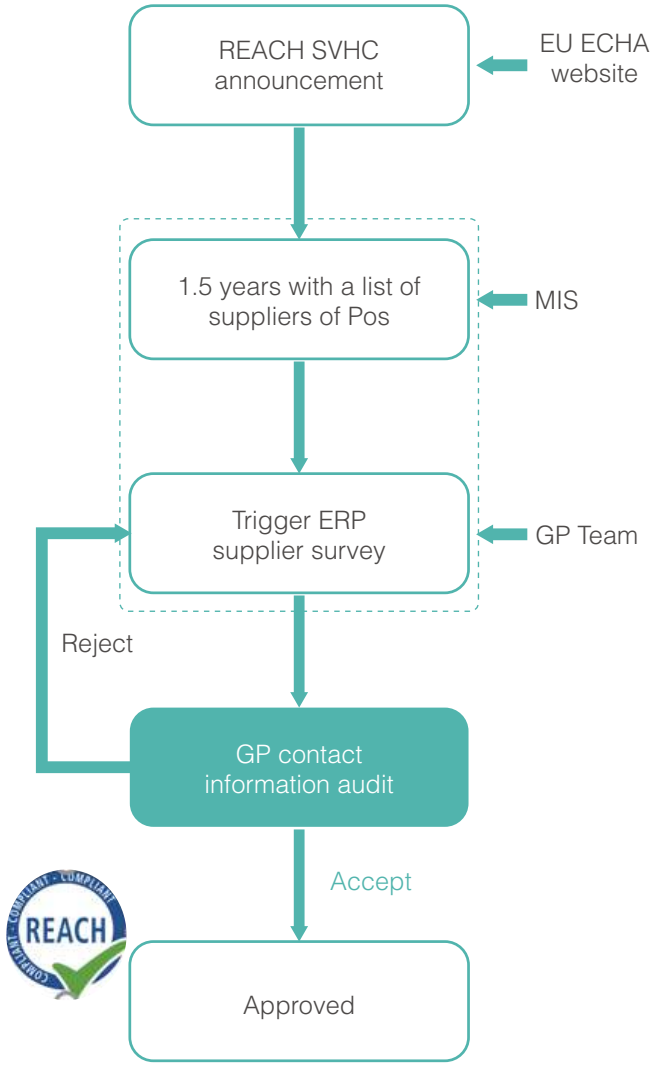
Simplo Technology is committed to conducting due diligence across its supply chain in accordance with the Organization for Economic Cooperation and Development (OECD) Guidelines for the responsible sourcing of minerals. This applies to ten specific minerals contained in our products: Tantalum (Ta), Tin (Sn), Tungsten (W), and Gold (Au) — collectively known as 3TGs — as well as Cobalt (Co), Mica, Copper (Cu), Natural Graphite (Gr), Lithium (Li), and Nickel (Ni).We have formally communicated to our suppliers that the procurement of the above 10 minerals must be exclusively sourced from conflict-free smelters and refiners that have been certified by internationally recognized third-party organizations, such as the Responsible Business Alliance (RBA) through the Responsible Minerals Initiative (RMI), formerly known as the Conflict-Free Sourcing Initiative. In alignment with our responsible sourcing strategy, Simplo Technology will also assist and encourage suppliers to actively engage with smelters and refiners not yet recognized by RMI to undergo verification under the Responsible Minerals Assurance Process (RMAP). This initiative reflects our long-term commitment to ethical sourcing, risk management, and building a sustainable, transparent, and accountable supply chain ecosystem.

Requirements for Suppliers

1. Suppliers should conduct due diligence on tungsten, tantalum, tin, gold, cobalt, mica, and their derivatives within the supply chain.
2. Suppliers should establish due diligence policies and management systems to identify relevant risks and take appropriate measures to mitigate such risks.
3. Suppliers should achieve 100% completion of supply chain due diligence.
4. Suppliers should submit due diligence reports (CMRT & EMRT) within the specified deadline.
5. Suppliers' due diligence report should 100% disclose the due diligence results, and the contents must be completely true, comprehensive, with no falsification or omissions.
6. The tungsten, tantalum, tin, gold, and cobalt smelters/refiners disclosed by suppliers should be validated by RMI or LBMA.
7. The template version for supplier due diligence reports (CMRT, EMRT) should be the latest version released by RMI.
8. The supplier due diligence reports should cover all products/components supplied to Simplo.
9. Supplier due diligence reports should not contain duplicate smelters or refiners, nor entities that do not meet the definition of a smelter or refiner.
10. New suppliers must sign the Conflict Mineral Declaration.
11. When introducing new products or changing smelters, a conflict minerals survey report must be proactively submitted.
12. When receiving system notifications of smelter update information, suppliers must promptly update CMRT/EMRT information and submit it to Simplo.
13. Smelters or refineries are subject to change and may sometimes be removed from the qualified list. Please stay updated with the official website

RMI website link: https://www.responsiblemineralsinitiative.org/smelters-refiners-lists/

SMP RoHS & REACH control: REACH supplier survey



Chemical management strategy

Simplo Technology ensures compliance with regulations and the spirit of REACH, regularly collects information on major international environmental regulations, stays abreast of the latest trends, and continuously promotes hazardous raw material (chemical) substitution programs.



Chemical Policy



Specific Measures

1. Before chemical procurement:

   Identify qualified chemical suppliers and obtain the chemical's MSDS and safety label for review.

2. Chemical incoming inspection:

   Suppliers must provide relevant permits (e.g. transport/import registration certificates) for review, confirming that the chemical's safety label is complete and the container is intact.

3. On-site chemical storage conditions:

   All chemicals must have an MSDS and safety label, and be equipped with the relevant emergency measures in accordance with the "Regulations on the Safety Management of Hazardous Chemicals" and related regulations.

4. Storage leak-prevention measures:

   Appropriate structures or devices must be provided to isolate incompatible hazardous chemicals; incompatible chemicals must not be stored in the same location and must be kept separate. Chemicals must be clearly labeled and properly packaged.

5. Chemical management training:

   Annual training and drills on emergency response capability for hazardous chemical leaks are conducted, with required protective equipment such as chemical protective gloves and respiratory protection worn.

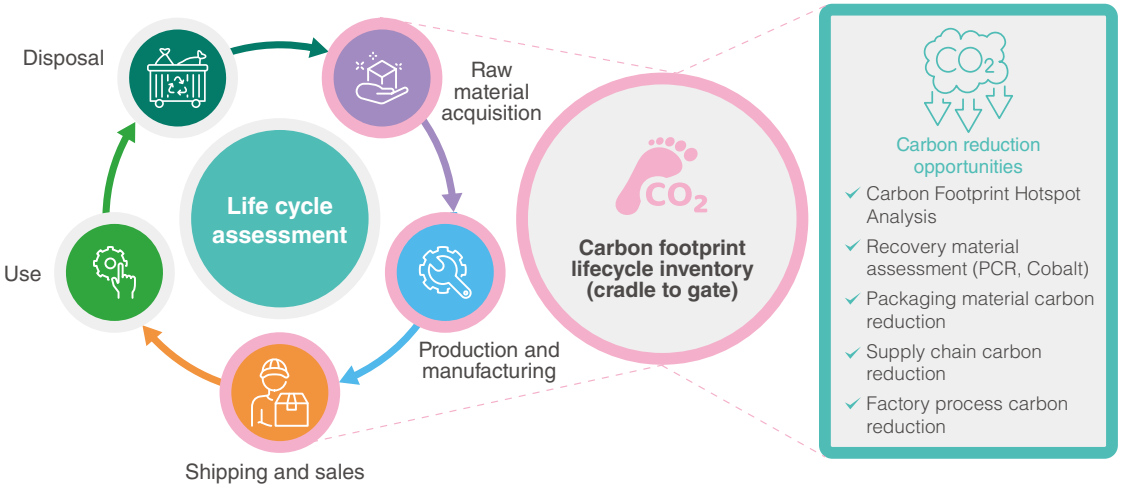
6. Disposal of all chemicals must comply with the "Hazardous Waste Management Regulations."

5.4 Product Carbon Footprint

Material Topics | Product Carbon Footprint

Customers (including ODM): Carbon Footprint Survey

Simplo Technology completed the carbon footprint verification of two NB battery modules in 2022 in accordance with the ISO 14067 standard. We have since established internal capabilities and tools for calculating carbon footprints, enabling us to provide customers with product carbon footprint information and to assess reduction opportunities at each stage of the product lifecycle, thereby reducing the environmental impact of product carbon emissions.



Project origin and benefits

Major international laptop manufacturers are launching "carbon neutrality" laptops. As a battery module supplier, Simplo Technology collaborates with customers on carbon footprint projects. Since 2023, a cumulative total of 31 product life cycle inventories (cradle to gate) have been conducted, building up the internal carbon footprint task force's related skills and helping the Company respond to customers' product carbon footprint requirements.

Project Implementation

Simplo Technology uses its self-developed Product Carbon Footprint System (PCF System) to independently conduct carbon footprint inventories and data management. In 2025, 6 product carbon footprint calculations (cradle to gate) were completed, bringing the cumulative total to 11 product inventories. Depending on differences in product Bill of Materials (BOM), product carbon footprints fall in the range of approximately 4-9 kg CO_2e.

Further analysis of carbon emission hotspots shows that the raw material stage is the main source of emissions, with PCBs, battery cells, and ICs being the top three contributors to total carbon emissions; carbon emissions are also clearly influenced by differences in PCB weight. These results indicate that the product design stage holds significant potential for carbon reduction through material reduction and the selection of alternative materials.

To continue reducing product carbon footprints, Simplo Technology incorporates environmental design thinking into the product R&D stage, using environmentally friendly materials, improving energy efficiency, and extending product lifecycles, moving toward the development of low-carbon products. (See the 5.1 Green Design section for details)

Carbon reduction opportunities

Simplo Technology identifies carbon reduction opportunities at each stage of the product's full life cycle:

- Raw material stage - Promoting environmentally friendly materials (RoHS, REACH) and the use of recycled materials (recycled cobalt, recycled plastics) to reduce the use of virgin resources and carbon emission intensity.
- Manufacturing stage - Implementing the ISO 14001 environmental management system and the ISO 14064-1 greenhouse gas inventory system, and promoting UL 2799 zero waste to landfill, to improve resource use efficiency and reduce process emissions.
- Distribution and transportation - Packaging material recycling and green transportation, to reduce carbon emissions during the logistics process.
- Use stage - Improving product energy efficiency and strengthening use safety, to reduce the environmental impact during the product's period of use.
- Scrap and recycling - Improving disassembly and reuse capability, to reduce the environmental burden of final disposal.

In response to the EU Battery Regulation's requirements for product environmental information disclosure, Simplo Technology continues to strengthen its product carbon footprint inventory capabilities and continuously optimize its calculation tools and data management mechanisms.