Product Environmental Report
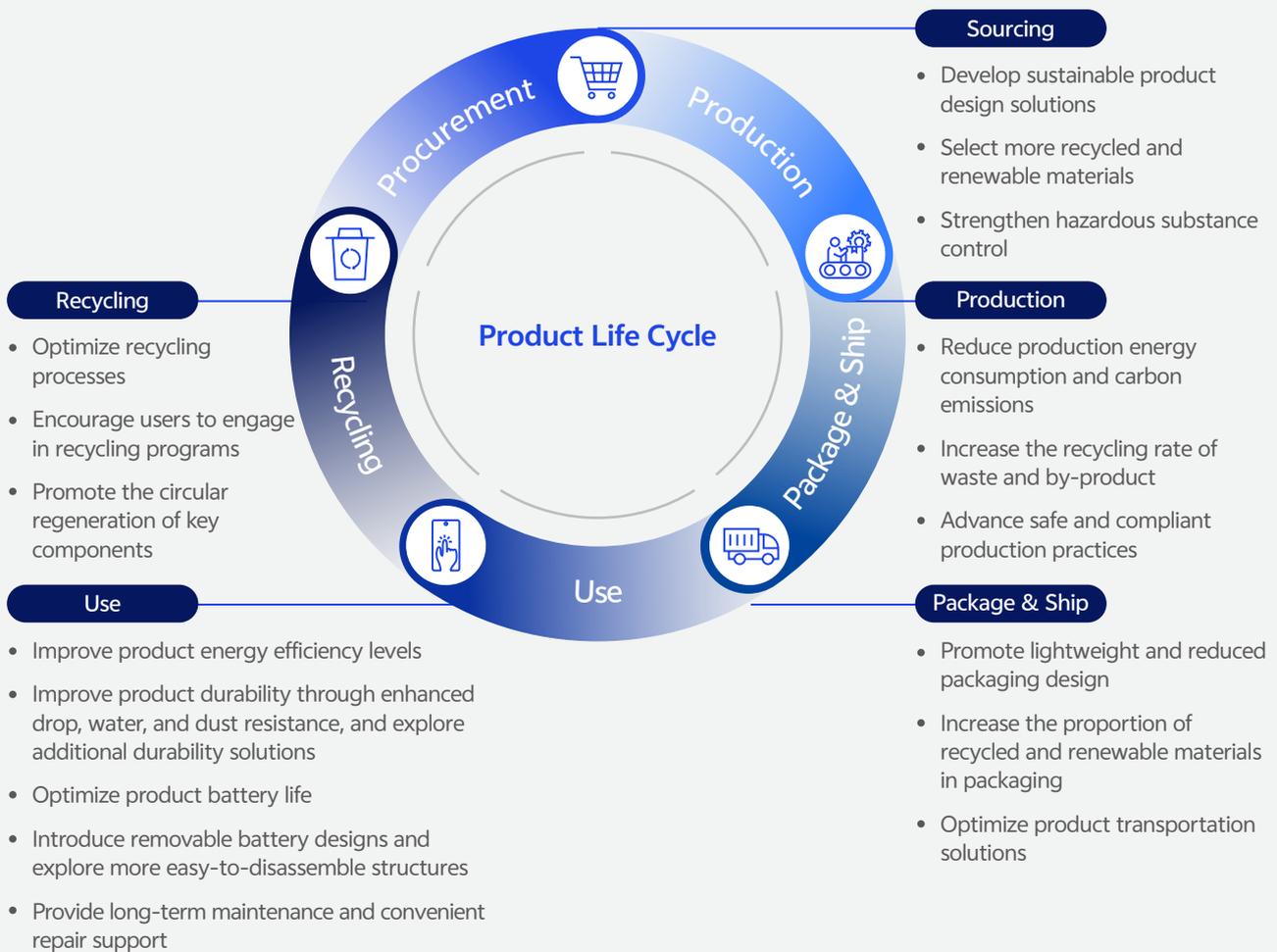
X300 | X300 Pro

2025.10.30

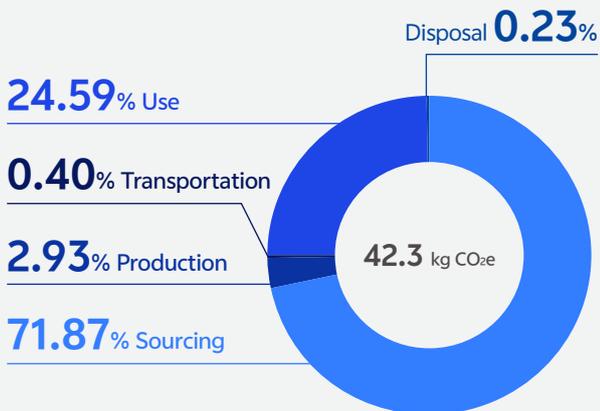*The product appearance is for reference only; the actual product shall prevail.

Sustainable Design Solutions

vivo assesses the environmental impact across the full life cycle of its products and advances sustainable design solutions covering five key stages: Sourcing, manufacturing, Package & Ship, use, and recycling. We focus on reducing energy consumption and carbon emissions, extending product value, and promoting the circular use of materials. By pursuing a low-carbon and regenerative system, we aim to enhance sustainability performance throughout the entire product life cycle.

Product Life Cycle

Procurement · Production · Package & Ship · Use · Recycling

Sourcing
- Develop sustainable product design solutions
- Select more recycled and renewable materials
- Strengthen hazardous substance control

Production
- Reduce production energy consumption and carbon emissions
- Increase the recycling rate of waste and by-product
- Advance safe and compliant production practices

Package & Ship
- Promote lightweight and reduced packaging design
- Increase the proportion of recycled and renewable materials in packaging
- Optimize product transportation solutions

Recycling
- Optimize recycling processes
- Encourage users to engage in recycling programs
- Promote the circular regeneration of key components

Use
- Improve product energy efficiency levels
- Improve product durability through enhanced drop, water, and dust resistance, and explore additional durability solutions
- Optimize product battery life
- Introduce removable battery designs and explore more easy-to-disassemble structures
- Provide long-term maintenance and convenient repair support
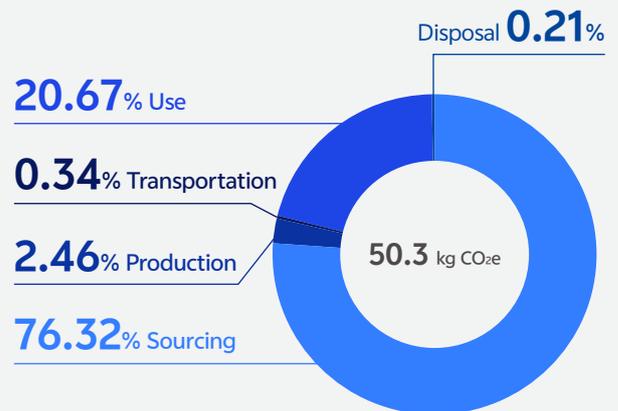
Carbon Footprint of Products

We have established a product carbon footprint assessment methodology in accordance with ISO 14040, ISO 14044, and ISO 14067 standards. The methodology covers all stages of the product life cycle, including Sourcing, production, transportation, use, and disposal. It systematically identifies key sources of carbon emissions and provides a scientific basis for sustainable product design. The assessment results show that the carbon emissions of the X300 and X300 Pro are mainly concentrated in the raw material procurement and product use stages. we will continue to optimize material structures, improve product energy efficiency, and enhance collaboration with supply chain partners to achieve a steady reduction in the product carbon footprint.

Disposal 0.23%

24.59% Use

0.40% Transportation

2.93% Production

71.87% Sourcing

42.3 kg CO_2e

X300 life cycle carbon emissions

Disposal 0.21%

20.67% Use

0.34% Transportation

2.46% Production

76.32% Sourcing

50.3 kg CO_2e

X300 Pro life cycle carbon emissions

Sourcing

We select and use recycled and renewable materials that support circular economy integration while reducing resource consumption and environmental footprint at the source.
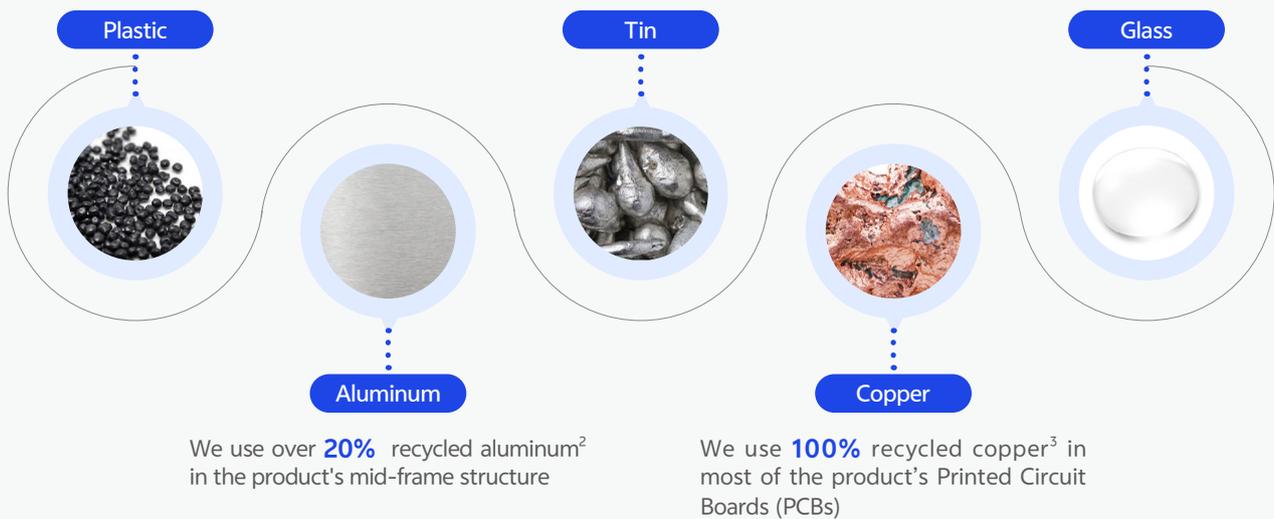
We strictly control the sourcing of materials, requiring suppliers to comply with the *vivo's Principles of Responsible Procurement*. We regularly assess potential risks related to social responsibility and environmental compliance, and rigorously conduct due diligence[1] across the conflict minerals value chain to ensure full compliance and transparency.

To ensure the long-term supply of critical natural resources, we strive to reduce material consumption while increasing the sourcing and use of recycled and renewable materials. The X300 and X300 Pro models incorporate multiple types of recycled and renewable materials , such as polyamide (PA) derived from plant-based sources like castor beans, to reduce reliance on fossil-based resources.
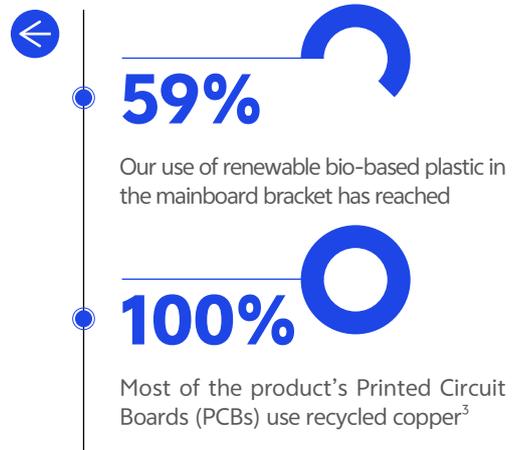
Our use of renewable bio-based plastic in the mainboard bracket has reached **59%**

We use over **20%** recycled tin[2] in the product's Surface-Mount Technology (SMT) soldering process

We use around **30%** recycled glass[2] in the product screen and back cover components

Plastic

Tin

Glass

Aluminum

Copper

We use over **20%** recycled aluminum[2] in the product's mid-frame structure

We use **100%** recycled copper[3] in most of the product's Printed Circuit Boards (PCBs)

The materials used in X300 and X300 Pro comply with *the vivo Environmental Standards for Procured Materials* for 52 controlled chemical substances, and strictly adhere to international environmental regulations such as EU RoHS and REACH. Beyond the regulatory compliance, we further strengthen hazardous substance management by proactively reducing or eliminating certain exempted substances. For example, we have collaborated with suppliers to promote the use of lead-free nuts.

59%

Our use of renewable bio-based plastic in the mainboard bracket has reached

100%

Most of the product's Printed Circuit Boards (PCBs) use recycled copper[3]

Production

We establish a long-term clean energy plan, strictly manage industrial pollution discharge, and continuously enhance the production park's cleaner production capability of the X300 and X300 Pro.

The production park for X300 and X300 Pro are certified under the ISO 14001 Environmental Management System and ISO 50001 Energy Management System. During production, 100% of industrial solid waste[4] is recycled, and emissions of exhaust gases, wastewater, and noise are strictly controlled in compliance with national environmental standards.

In 2024, the production park for X300 and X300 Pro completed energy-saving technology upgrades, reducing over 2,876.86 tCO₂e in GHG emissions while renewable energy usage and procurement totaled 22,600.8 MWh. By 2025, the existing distributed solar projects in the park will provide around 9,470 MWh of renewable energy per year for manufacturing operations.

2,876.86 tCO_2e

Reduced over in GHG emissions in 2024

22,600.8 MWh

Renewable energy usage and procurement reached

Package & Ship

While ensuring stability and protective performance, we continuously advance the material reduction of our packaging design. By optimizing structures, minimizing plastic usage, choosing renewable and recycled materials, we reduce the environmental impact of our product packaging.

For X300 and X300 Pro, packaging design has been optimized by refining structural layouts and cable winding methods to minimize packaging volume. In certain markets, unnecessary travel chargers have been removed to further reduce material consumption. Meanwhile, we are working to advance plastic reduction in packaging, the X300 and X300 Pro packaging is over 99%[5] fiber-based, with 53%[5] made from recycled materials. All packaging materials strictly comply with hazardous substance control standards, ensuring safety and environmental friendliness from the source.

99%[5]

The X300 and X300 Pro use fiber-based packaging over

Color box

Use FSC certified paper[6] to ensure packaging paper is sourced from sustainably managed woodlands

Wrapping film

Replace the original MOPP plastic wrapping film with degradable sulfuric acid paper

Paper trays

Renewable pulp[6] accounts for no less than **50%**

Printing ink

Use **100%** renewable soy-based ink

Tray

Use **100%** recycled materials

Packaging

The overall plastic usage in packaging is approximately **1.27%**[7]

We collaborate with our supply chain partners to optimize logistics processes, promoting the use of clean energy and route optimization during the transportation of X300 and X300 Pro, reducing greenhouse gas emissions. At the same time, we have optimized transport materials while ensuring safety and reliability, reducing the weight of composite transport pallets by 20%[8]. For transport cartons, we have achieved the recycling and reuse of approximately 547.8 tons of materials, reaching an overall recycling rate of 85%.

Use[9]

To reduce the environmental impact throughout the product's lifecycle, we continuously optimize product performance through various measures. For example, we strictly control key parameters such as temperature, humidity, discharge cutoff voltage, and current rate during battery testing to ensure long-term stability and reliability. At the same time, we enhance product durability through technological innovation and rigorous manufacturing processes, while providing comprehensive maintenance and repair support.

Optimized product energy efficiency

- Using a dual high-efficiency NPU, peak performance increases by **111%**, while power consumption at peak performance is reduced by **56%**[10].
- Both models feature an ultra-light graphics framework and a streamlined rendering pipeline, delivering smoother system animations with lower power consumption, and boosting battery life by **10%**[11].
- The X300 and X300 Pro are equipped with the System Lightweight 3.0 technology, reducing background's average power consumption by approximately **40** mAh and further enhancing battery life.
- Both products have obtained **ERP energy efficiency certification**.

Improved product durability

- The X300 and X300 Pro use an integrated cold-carving process for the mid-frame and back panel, achieving both IP68 and IP69 water and dust resistance standards[12].
- The X300 and X300 Pro are equipped with G4 silicon batteries, which retain **80%** of their original capacity even after **1,200** standard charge-discharge cycles, ensuring users enjoy long-lasting and stable battery performance.

Disassembly-friendly product design

- The X300 and X300 Pro adopt easily removable battery designs that allow damage-free disassembly using standard tools, accompanied by detailed, standardized repair instructions in the user manual.

Product maintenance support

- vivo provides users with up to **8** years of supplying spare parts for key product components[13] to protect users' long-term rights and interests.

8 years

Service life for supplying spare parts for key product components can be up to

Recycling

To promote the development of a circular economy and implement Extended Producer Responsibility (EPR) requirements, we have partnered with multiple stakeholders to build a recycling system and continuously improve resource circulation efficiency.

As of now, vivo has established a comprehensive product recycling system in 66 countries and regions worldwide. In 2024, through initiatives such as *Trade-in* programs and *Service of Repairing and Retaining Broken Parts at a Favorable Price* campaign，we collected over 1.31 million old devices via our official website, online platforms, and offline stores. Leveraging our global after-sales recycling system, discarded components and defective parts are collected and treated in an environmentally responsible manner. In 2024, the total recycled volume reached approximately 306.1 tons, of which more than 243 tons came from electrical and electronic equipment waste. All waste is handled in compliance by third-party organizations with environmental qualifications, maintaining a 100% compliance disposal rate.

For products recycled during operations, we conduct inspection and maintenance before repurposing them for business support and employee training, thereby extending their lifecycle and improving resource utilization efficiency.

We have launched a pilot battery recycling program in the Chinese market. All service outlets nationwide are required to discharge collected batteries to below 3.4V, after which they are centrally received, counted, and stored separately at headquarters for unified environmentally compliant disposal, ensuring both safety and adherence to environmental standards.

66 countries and regions

vivo product recycling system covers

1.31 million

In 2024, old devices were collected for recycling over

Definitions

Product Carbon Footprint

The product carbon footprint is assessed using the Life Cycle Assessment (LCA) methodology, in alignment with ISO 14040, ISO 14044, and ISO 14067 standards. The assessment boundary encompasses the entire product life cycle, including the physical product, all components, packaging materials, and in-box accessories. The calculation covers carbon dioxide equivalent (CO_2e) emissions across the following life cycle stages:

- **Sourcing:** Includes the sourcing of raw materials for products and packaging, covering upstream supplier activitices such as resource extraction, primary processing, and transportation.

- **Production:** Includes manufacturing activities such as the assembly, testing, and packaging of products and components. Emissions from energy use in production equipment and facility operations are also included.

- **Transportation:** Includes ground, sea, and air transportation of finished products and packaging from manufacturing sites to regional distribution centers and customers. Regional transportation is modeled based on average distances.

- **Use:** Assumes an average product lifetime of three years for smartphones. Total energy use over that period is modeled based on representative user behavior, including activities such as video playback and app operation. Geographic differences in electricity grid mix are accounted for at a regional level when calculating energy-related emissions.

- **Disposal:** Includes emissions from transportation between collection points and recycling centers, as well as from mechanical dismantling, sorting, and shredding processes.

Bio-based Plastics

Bio-based plastics refer to polyamide (PA) and polycarbonate (PC) materials made from renewable resources such as castor oil. Compared with conventional plastics, these materials generate lower carbon emissions and fewer pollutants during production, resulting in reduced environmental impact.

Responsible Procurement

Responsible procurement refers to the systematic implementation of due diligence to identify and manage social, environmental, and governance risks within the supply chain. vivo requires suppliers to ensure compliance through binding commitments and relies on independent third-party assessments, such as the Responsible Minerals Assurance Process (RMAP), to verify that smelters meet ethical standards.

Recycled Materials

Recycled materials refer to materials derived from recovered rather than newly extracted resources, aiming to enhance the efficiency of limited resource utilization. In this report, the recycled material content of products is measured on a mass basis.

Renewable Materials

Renewable materials refer to materials that can be regenerated within a human timescale, such as bamboo fibers or agricultural by-products. In this report, the renewable material content of products is measured on a mass basis.

NPU

NPU stands for Neural Processing Unit, a specialized processor designed for neural network computation.

Appendix

1.For more information, please refer to the *vivo's 2024 Sustainability Report* and the *vivo Specifications for Managing Procurement of Responsible Minerals*

2.Recycled aluminum, recycled tin, and recycled glass are pre-consumer materials diverted from the waste stream during the manufacturing process.

3. Recycled copper is a post-consumer material generated from households or commercial, industrial, and institutional facilities.

4.Types of industrial solid waste include plastics, scrap metal, and waste paper, among others.

5.The data is calculated based on the packaging of actual retail product in vivo European market. The proportion of fiber-based material is calculated as the percentage of the total packaging mass after excluding minor components such as adhesives, inks, and coatings. The proportion of recycled materials is calculated as the ratio of the mass of recycled materials to the total mass of fiber-based material.

6.Applicable to product packaging for the European market.

7.The data is calculated based on the packaging of vivo's actual retail products. The proportion of plastic usage is calculated as the mass percentage of plastic materials in the total packaging mass, including trace components such as adhesives, inks, and coatings.

8.The data is derived from a comparison with the weight of the composite pallets used in the previous generation of transport materials.

9.The data and parameters are based on tests conducted under standard laboratory conditions at vivo. Actual results may vary slightly depending on factors such as testing environment, software version, and supplier material batches.

10. This power consumption reduction data represents the implementation effect of the relevant optimization measures, not the power consumption information of the entire device.

11. This improvement data in battery life represents the implementation effect of the relevant optimization measures, not the battery life capacity information of the entire device.

12. Under controlled laboratory conditions, tested according to the GB/T 4208-2017 (China) standard, the devices achieve IP69 and IP68 ratings. For IP68 water resistance testing: ① still water at a depth of 1.5 meters; ② test duration 30 minutes; ③ water temperature difference with the product shall not exceed 5 degrees Celsius. For IP69 water resistance testing: ① turntable speed: (5±1) r/min; ② nozzle angles: 0°, 30°, 60°, 90°; ③ flow rate: (15±1) L/min; ④ water temperature: (80±5)°C; ⑤ test duration: 30 seconds per position; ⑥ phone placement method: phone placed vertically with USB port facing downward. Resistance to hot water, sprays, immersion, and dust is not permanent, and protection may decrease due to daily wear and tear.

13. The supply duration for spare parts of key product components varies across different markets.

14. This report has completed SGS's independent assurance, in review the reliability of the sources and data handling of the relevant information disclosed in the Report.