Product Carbon Neutrality Report

For Fiscal Year 2023/24

2023 December

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1. Introduction

This Report aims to provide information on the carbon neutrality of the Lenovo Products advertised as carbon neutral (hereinafter referred to as the "Products") in Fiscal Year 2023/24[1].

The Report will be updated annually[2], in accordance with French Décret n° 2022-539 of 13 April 2022[3] on carbon compensation and carbon neutrality claims in advertisements.

Lenovo declared to achieve carbon neutrality for the estimated sales volume for the Products. The Products' carbon neutrality was certified.

Table 1. Carbon Neutral Products and Specification

Carbon Neutral Products in Fiscal Year 2022/23	
Yoga Book 9 13IRU8	
with accessories of Yoga Book 9 Bluetooth KB, the folio stand, the digital pen and the 65W adapter included	
Carbon neutrality certification was issued by TÜV Rheinland Greater China in accordance with PAS 2060:2014 *Specification for the Demonstration of Carbon Neutrality*.	
Product Specifications Reference	https://psref.lenovo.com/Product/Yoga/Yoga_Book_9_13IRU8
Carbon Neutral Products in Fiscal Year 2023/24	

[1] Fiscal Year 2023/24, i.e., April 1, 2023 – March 31, 2024

[2] Due to third-party review and translation reasons, the Report may be updated after the new product certified, Lenovo promises to release as soon as possible.

[3] Décret n° 2022-539 du 13 avril 2022 relatif à la compensation carbone et aux allégations de neutralité carbone dans la publicité - Légifrance (legifrance.gouv.fr)

Legion 9 16IRX9[4]	
with accessories of 330W adapter and 140W adapter (only for specific countries and regions) included	
Carbon neutrality certification was issued by TÜV Rheinland Greater China in accordance with PAS 2060:2014 *Specification for the Demonstration of Carbon Neutrality*.	
Products Specifications Reference	*Coming soon*
Yoga Pro 9 16IMH9[5]	
with accessories of 170W (for DIS configuration) adapter and 100W adapter (for UMA configuration) included	
Carbon neutrality certification was issued by TÜV Rheinland Greater China in accordance with PAS 2060:2014 *Specification for the Demonstration of Carbon Neutrality*.	
Products Specifications Reference	*Coming soon*

[4] This product involves three models for different sales channels: Legion Y9000K IRX9 for PRC; Lenovo Legion 9 16IRX9 D1 for India; Legion 9 16IRX9 for the rest of world (the same below).

[5] This product involves two models for different sales channels: YOGA Pro 16s IMH9 for PRC; Yoga Pro 9 16IMH9 for the rest of world (the same below).

ThinkBook 13x G4 IMH	
with accessories of Lenovo Magic Bay Light (MagiCandle) and 65W adapter included	
Carbon neutrality certification was issued by British Standards Institution (BSI) in accordance with PAS 2060:2014 Specification for t*he Demonstration of Carbon Neutrality*.	
Products Specifications Reference	*Coming soon*
Yoga 9 2-in-1 14IMH9[6]	
with accessories of sleeve, the digital pen and 65W adapter included	
Carbon neutrality certification was issued by TÜV Rheinland Greater China in accordance with PAS 2060:2014 Specification for t*he Demonstration of Carbon Neutrality*.	
Products Specifications Reference	*Coming soon*

[6] This product involves two models for different sales channels: Yoga 9 2-in-1 14IMH9 1 for India; Yoga 9 2-in-1 14IMH9 for the rest of world (the same below)

Yoga Book 9 13IMU9[7]	
with accessories of Yoga Book 9 Bluetooth KB, the folio stand, the digital pen, the mouse and the 65W adapter included	
Carbon neutrality certification was issued by TÜV Rheinland Greater China in accordance with PAS 2060:2014 *Specification for the Demonstration of Carbon Neutrality*.	
Product Specifications Reference	*Coming soon*

2. Product Carbon Footprint

The product carbon footprint (PCF) calculation of the Products is conducted by using SimaPro and Ecoinvent Database, following IPCC 100-year Greenhouse Gas Emissions Assessment Method (IPCC 2021 GWP 100a), in accordance with ISO 14067:2018 *Greenhouse Gases – Carbon Footprint of Products – Requirements and Guidelines for Quantification*.

Table 2. PCF Balance Sheet of the Products

Products Carbon Footprint	**Unit: kg CO_2e/pcs**
Yoga Book 9 13IRU8	
Product Carbon Footprint before carbon credits	193.11
Carbon credit	193.11
Total Product Carbon Footprint after carbon credits	**0**

[7] This product involves two models for different sales channels: Yoga Book 9 13IMU9 1 for India; Yoga Book 9 13IMU9 for the rest of world (the same below)

Legion 9 16IRX9	
Product Carbon Footprint before carbon credits	467.47
Carbon credit	467.47
Total Product Carbon Footprint after carbon credits	**0**
Yoga Pro 9 16IMH9	
Product Carbon Footprint before carbon credits	222.34
Carbon credit	222.34
Total Product Carbon Footprint after carbon credits	**0**
ThinkBook 13x G4 IMH	
Product Carbon Footprint before carbon credits	172.40
Carbon credit	172.40
Total Product Carbon Footprint after carbon credits	**0**
Yoga 9 2-in-1 14IMH9	
Product Carbon Footprint before carbon credits	169.15
Carbon credit	169.15
Total Product Carbon Footprint after carbon credits	**0**
Yoga Book 9 13IMU9	
Product Carbon Footprint before carbon credits	204.54
Carbon credit	204.54
Total Product Carbon Footprint after carbon credits	**0**

Detailed information of the PCF calculation and carbon reduction methods is provided in Annex 1 and Annex 2.

3. Carbon Reduction

Lenovo recognizes that human activities are contributing to climate change and concurs with the findings of current climate science as described in the latest assessment report from the Intergovernmental Panel on Climate Change (IPCC). Lenovo also recognizes that if left unchecked, current trends

in climate change present serious economic and societal risks and agrees that specific actions are needed to stabilize atmospheric Greenhouse Gas (GHG) levels and hold global average temperatures to acceptable increases. Lenovo is working both internally and externally to help minimize and mitigate climate risks, and the commitment has been demonstrated by (detailed information can be found in Lenovo Annual Environmental, Social and Governance (ESG) Report):

- Implementing a corporate Climate and Energy Policy
- Executing a long-term comprehensive Climate Change Strategy
- Setting corporate-wide objectives and target which support the above Policy and Strategy[8]

Detailed information of Lenovo's carbon reduction path is provided in Annex 2.

4. Compensation of Residual Emissions

Lenovo has developed a stringent criterion to select carbon compensation programs for residual emission of the Products after carbon footprint reduction by environmentally conscious design.

Detailed information of the carbon compensation programs is provided in Annex 3.

[8] 3.0 Environment, 2022/23 Environmental, Social and Governance Report

Annex 1 Product Carbon Footprint Evaluation

This Annex provides detailed information on the scope, functional unit, boundary, emission data and the methodological measures of the Products' PCF.

Lenovo used life cycle assessment (LCA) methodology to perform the Products' PCF calculation.

1.1 Scope

The Products were commercialized as SKUs (stock keeping unit) based on variation in the part configurations. The variation might result in difference in the PCF of different SKUs.

To ensure that Lenovo has fully achieved carbon neutrality for the Products, conservative approaches have been taken for PCF calculation.

1.2 Functional Unit

The PCF method relies on a "functional unit" (FU) for GHG emissions quantification. This Report defines the functional unit as the Products operating for 4 years.

1.3 System Boundaries

The system boundary considered in the PCF calculation was from cradle to grave, and the lifecycle stages included:

- Raw Material
- Manufacturing
- Distribution
- Use
- End of life

1.4 Cut-off Criteria

All inputs and outputs to a process have been included in the calculation for which data is available. The cut-off criteria were set that emission sources estimated to constitute less than 1% of the total PCF might be cut-off, and the total cut-offs constitute less than 5% of the total PCF.

1.5 Use and End-of-life phases and Associated Process

The Use phase assumed that the Products were used for 4 years by users from different regions. The user region assumption was from sales prediction. The Product energy consumption was tested in accordance with *ENERGY STAR Program Requirements for Computers Version 8.0*.

The data of End-of-life phase was in accordance with *WEEE Directive 2012/19/EU* and *IEC TR 62635*, which included re-use, recycling, incineration and disposal.

1.6 Electricity Consumption Data

The electricity, tap water, natural gas and heat consumption through the lifecycle were considered, and Ecoinvent database was selected for calculation according to region, voltage level and gas pressure.

1.7 Geographical Scope

The Products (including subparts) were manufactured and assembled in Asia, distributed and used globally. Country-level or region-level emission factors were selected according to the locations where emissions occurred. When the factors were not available for a specific region or there was no specific location of emission sources, the global averages were selected.

1.8 PCF Result

The PCF of the Products is shown in the following table.

Table 3. PCF of the Products[9]

Products	PCF (Unit: kg CO_2e/pcs)
Yoga Book 9 13IRU8	193.11
Legion 9 16IRX9	467.47
Yoga Pro 9 16IMH9	222.34
ThinkBook 13x G4 IMH	172.40
Yoga 9 2-in-1 14IMH9	169.15
Yoga Book 9 13IMU9	204.54

1.9 Verification

All the data sources, calculation modelling, background databases and the PCF of the Products have been verified by the certification authority of carbon neutrality.

[9] The calculation was based on LCA methodology.

Annex 2 Carbon Reduction Path

In 2020, Lenovo established science-based emissions reduction targets, which were validated by the Science Based Targets initiative (SBTi). Its Scope 1 and 2 emissions reduction targets are consistent with limiting warming to 1.5°C, and its Scope 3 emissions reduction targets meet ambitious criteria according to the SBTi's methodology, which means they are in line with current best practices.

In 2023, Lenovo announced SBTi validated target to reach net-zero GHG emission by 2050. Lenovo's net-zero target is to achieve a 90-percentage reduction across Scope 1, 2 and 3 emissions, and was the first PC and smartphone maker and one of the first 139 companies in the world to establish a net-zero target validated by SBTi[10].

These targets have a base year of Fiscal Year[11] (FY) 2018/19, near-term target year of FY 2029/30, and net-zero target year of FY 2049/50. The following table details the Company's Science-Based Targets, road maps for their achievement, and progress against the targets in FY 2022/23[12,13].

Table 4. Lenovo Emissions Reduction Targets and Road Map[7,8]

Lenovo Emissions Reduction Near-Term Targets	Road Map	FY 2029/30 Target
Reduce absolute Scope 1 + Scope 2 GHG emissions (related to Lenovo's operations) by 50%	• Hierarchical combination of energy efficiency, on-site renewable energy generation, and	- 50%

[10] https://sciencebasedtargets.org/companies-taking-action#dashboard

[11] Fiscal year i.e., April 1 – March 31.

[12] https://www.lenovo.com/content/dam/lenovo/site-design/esg-document-library/global/corp-policies/ghg/Lenovo_Climate-Transition-Plan.pdf

[13] 3.0 Environment, 2022/23 Environmental, Social and Governance Report

	renewable energy commodities	
Reduce Scope 3 GHG emissions (value chain) from use of sold products -35% on average for comparable products	• Reduce product emissions through energy efficiency improvements, engaging customers to use more renewable energy	- 35%
Reduce Scope 3 GHG emissions (supply chain) from procured goods and services 66.5% per million US$ gross profit	• Inclusion of climate change requirements in Supplier Code of Conduct • Supplier climate data collected annually from subset of suppliers • Climate change KPIs included in supplier ESG scorecards (evaluation process) • Expand supplier program to greater number of suppliers/ data capabilities and SBTi level of commitment	- 66.5%
Reduce Scope 3 GHG emissions from global logistics	• Modal shift to lower carbon modes of transport	- 25%

operations by 25% per tonne-km of transported product	• Optimization of transport planning • Increase of vehicle utilization • Improvement of vehicle fuel efficiency	
Lenovo Emissions Reduction Long-Term Targets	**Road Map**	**FY 2049/50 Target**
Reduce all GHG emissions by 90% - absolute reduction of Scope 1, 2 and 3 emissions. Neutralize remaining 10% of emissions through carbon capture, reforestation, or other means	• Above concepts continue drive energy efficiency at Lenovo sites, for products, expand supplier program in commitment	- 90%

The following table shows current Lenovo's GHG emission data in FY 2022/23, compared to the baseline year FY 2018/19.

Table 5. Lenovo Scope 1, 2 and 3 GHG Emission Data

GHG Emissions (metric tons CO_2e)	**FY2018/19**	**FY2022/23**
Scope 1+2 (market-based)	32,060	25,843
Scope 3	20,432,492	18,741,480

Besides, Lenovo's corporate-wide environmental standards and specifications require its product designers to consider environmentally conscious design practices. By encouraging recycling, minimizing resource consumption and

improving product energy efficiency, Lenovo aims to facilitate the carbon footprint reduction in its products.

The following environmentally conscious design has been introduced to the Products for carbon reduction.

Table 6. Environmentally Conscious Design in the Products

Environmental Aspect	Design Description
Yoga Book 9 13IRU8	
Material	• 100% Recycled Aluminum on A Cover • 90% PCC Recycled Plastic used in 65W Adapter Case • 30% PCC Recycled Plastic used in Speaker Woofer Enclosure • 90% PCC Recycled Plastic used in Battery Pack
Packaging	• FSC-certificated Paper used in Box, Cushion, and Manual
Energy Efficiency	• ENERGY STAR® 8.0
Legion 9 16IRX9	
Material	• 90% Recycled Magnesium Aluminum alloy on C cover and D cover • 30% PCC Recycled Plastic used in 330W and 140W Adapter Case • 30% PCC Recycled Plastic used in Battery Pack
Packaging	• FSC-certificated Paper used in Box, Cushion, and Manual
Yoga Pro 9 16IMH9	
Material	• 50% Recycled Aluminum alloy on D cover

	• 30% PCC Recycled Plastic used in 170W Adapter Case and 90% PCC Recycled Plastic used in 100W Adapter Case • 30% PCC Recycled Plastic used in Battery Pack • 30% PCC Recycled Plastic used in Speaker Enclosures • 50% PCC Recycled Plastic used in Keyboard Keycap
Packaging	• Plastic-Free package with 100% FSC-certificated Paper used in Box and Manual
Energy Efficiency	• ENERGY STAR® 8.0 • Energy measurement is 42% less than ENERGY STAR requirement
ThinkBook 13x G4 IMH	
Material	• 50% Recycled Aluminum alloy on D cover in normal version • 90% PCC Recycled Plastic used in 65W Adapter Case • 30% PCC Recycled Plastic used in Speaker Enclosures • 50% PCC Recycled Plastic used in Keyboard Keycap
Packaging	• Plastic-Free package with 100% FSC-certificated Paper used in Box, Cushion and Manual
Energy Efficiency	• ENERGY STAR® 8.0 • Energy measurement is 52% less than ENERGY STAR requirement

Yoga 9 2-in-1 14IMH9	
Material	• 50% Recycled Aluminum alloy on D cover • 90% PCC Recycled Plastic used in Adapter Case • 30% PCC Recycled Plastic used in Battery Pack • 30% PCC Recycled Plastic used in Speaker Enclosures • 50% PCC Recycled Plastic used in Keyboard Keycap
Packaging	• Plastic-Free package with 100% FSC-certificated Paper used in Box, Cushion and Manual
Energy Efficiency	• ENERGY STAR® 8.0 • Energy measurement is 46% less than ENERGY STAR measurement
Yoga Book 9 13IMU9	
Material	• 100% Recycled Aluminum on A cover • 90% PCC Recycled Plastic used in 65W Adapter Case • 90% PCC Recycled Plastic used in Battery Pack • 30% PCC Recycled Plastic used in Woofer Speaker Enclosures • 65% PCC Recycled Plastic in select parts of the Mouse
Packaging	• Plastic-Free package with 100% FSC-certificated Paper used in Box, Cushion, and Manual

Energy Efficiency	• ENERGY STAR® 8.0 • Energy measurement is 56% less than ENERGY STAR requirement

Annex 3 Carbon Compensation of Residual Emissions

Lenovo has developed internal *Guidance for Carbon Credits Purchases*, including following aspects to ensure the professionalism of suppliers and the integrity and effectiveness of carbon compensation programs:

- General requirements as Lenovo supplier
- Carbon credit trading experiences
- Mature and mainstream crediting mechanisms
- Traceability and transparency of carbon credit projects
- High-quality and industry-recognized project types
- Carbon credit retirement documents

The following table shows the source of carbon credits used in the Products.

Table 7. Carbon Credit Project[14]

Crediting Mechanisms	Project Type	Offset Type	Location	Cost (€/ tCO2)	Year of Retirement
CCER[15]	Hydropower	Avoided Emission CM-001-V01	China	<10	2022
VCS[16]	Wind Power	Avoided Emission ACM0002	China	<10	2023
CDM[17]	Wind Power	Avoided Emission ACM0002	China	<10	2023

[14] Carbon credit sellers: Lianshengzhida (Hainan) Supply Chain Management Co., LTD; Climate Bridge (Shanghai) Ltd.; and Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.
[15] CCER: Chinese Certified Emission Reduction
[16] VCS: Verified Carbon Standard
[17] CDM: Clean Development Mechanism

GS[18]	Wind Power	Avoided Emission ACM0002	China	<10	2023
GS	Biogas Electricity	Avoided Emission ACM0010	China	<10	2023

Lenovo has offset the residual carbon emissions of the Products using carbon credits mentioned above based on the PCF values, and the carbon compensation quantity and the retirement ID has been verified by the certification authority of carbon neutrality.

[18] GS: Gold Standard

Glossary

Carbon neutrality: Referring to PAS 2060:2014 *Specification for the Demonstration of Carbon Neutrality*, is the state of being carbon neutral, i.e., condition in which during a specified period there has been no net increase in the global emission of greenhouse gases to the atmosphere as a result of the greenhouse gas emissions associated with the subject during the same period.

Product carbon footprint (PCF): i.e., carbon footprint of a product, referring to ISO 14067:2018 *Greenhouse Gases – Carbon Footprint of Products – Requirements and Guidelines for Quantification*, sum of GHG emissions and GHG removals in a product system.

Scope 1 GHG emission: direct emissions from operations that are owned or controlled by Lenovo.

Scope 2 GHG emission: indirect emissions from the generation of purchased or acquired electricity, steam, heating or cooling consumed by Lenovo.

Scope 3 GHG emission: indirect emissions (not included in Scope 2) from Lenovo's upstream and downstream value chain.

Reference

1. PAS 2060:2014 Specification for the Demonstration of Carbon Neutrality.
2. ISO 14067:2018 Greenhouse Gases – Carbon Footprint of Products – Requirements and Guidelines for Quantification
3. ISO 14040:2006 Environmental management — Life cycle assessment — Principles and framework
4. ISO 14044:2006 Environmental management — Life cycle assessment — Requirements and guidelines
5. Lenovo 2022/23 Environmental, Social and Governance Report