

Product Carbon Footprint Report



Notebook C423

ASUS Computer provides products of superior quality to consumers, with an emphasis on environmentally friendly design and exposure to environmental performance. In addition to providing basic product information, such as: hardware specifications and system performance, it is also expected to let consumers know the characteristics of the environmentally-friendly design of the purchased ASUS products, and the environmental impact of the products at different stages.

The life cycle of this product, including: raw material procurement, product manufacturing, use, package, disposal.

Ecolabel Certificate



Raw materials are in line with humane mining and operations

Raw material procurement

ASUS controls all materials used in the manufacture of products, including the purchase of metals. To ensure that metals meet legal mining and operations, ASUS requires suppliers to prioritize the procurement of minerals that meet third-party verification sources.

The source of raw materials is in line with the supply chain of the international Responsible Mineral Initiative (RMI) due diligence and management.



Compliance with EU RoHS and national hazardous substances control laws

Product Manufacturing

Hazardous free substance

ASUS strictly manages substances that are harmful to the environment and human body. All ASUS products comply with the European Union's Electrical and Electronic Equipment Restriction of Hazardous Substances (EU RoHS) and other national hazardous substances control laws.



Responsible Business Alliance
Formerly the Electronic Industry Citizenship Coalition
Advancing Sustainability Globally

Asus is the full member of Responsible business alliance

Labor and Human Right

Asus protects labor rights and implements responsibility manufacturing. All workers employed in the manufacture of products, their labor rights and operating environment are properly protected and managed, and comply with labor, safety and environmental protection laws and regulations.



The proportion of carbon footprint:

Production: 48.9%

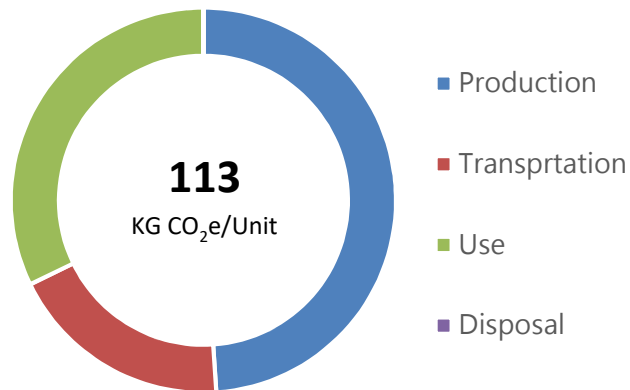
Transportation: 18.9%

Use: 32.2%

Disposal: 0.01%

Product Carbon Footprint

The proportion of carbon footprint generated during the life cycle of production, transportation, use, and disposal is as follows:

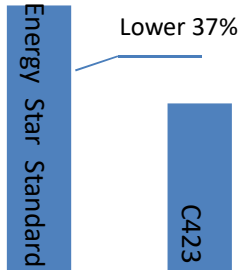


Water usage for parts and products manufacturing does not affect local water resources and ecological environment

Product Water Footprint

Parts suppliers with high water consumption in the process, their operation and manufacturing water, will not cause local water resources and environmental impact

Average energy consumption is lower than the ENERGY STAR standard: 37%



Use

In the product use phase, the energy-saving design meets the requirements of the latest Energy Star Standard 7.0, and the energy consumption values used in different modes and regional voltages are as follows:

Mode	100V/60Hz	115V/60Hz	230V/50Hz
P _{Off} (W)	0.3828	0.3852	0.4152
P _{Sleep} (W)	0.4272	0.4284	0.4596
P _{Long Idle} (W)	1.6512	1.6500	1.6860
P _{Short Idle} (W)	3.5388	3.5328	3.5856
E _{TEC} (KWh)	12.8945	12.8867	13.2183



90% of packaging materials can be recycled immediately; paper materials contain at least 80% recycled materials

Package

In the design and material selection of the product packaging materials, consider the short life cycle of the packaging materials and the impact of waste of resources after use, and use materials that can be immediately recycled and reused, and recycled materials using paper materials.

Material	Weight(g)
Paper(corrugated paper)	698.85
Plastic	13.90



Modular design:
90% materials and parts are
easy to recycle and reuse in
waste treatment plants

Disposal

Product modular design, 90% materials and parts are easy to recycle and reuse.

ASUS promises to recycle its own brand of waste products, and cooperate with qualified recyclers to properly recycle the waste products that consumers have replaced, in line with the EU Waste Electrical and Electronic Equipment Directive (EU WEEE) and other national waste management laws.

The five major regions provide recycling services, including Europe, North America, Taiwan, China, and Australia. Select your location and get a closer look at product recycling service information and contact window <http://csr.asus.com/chinese/article.aspx?id=77>



Definitions

Methodology

Estimated emissions are calculated in accordance with guidelines and requirements as specified by ISO 14040 and ISO 14044. There is inherent uncertainty in modeling carbon emissions due primarily to data limitations.

Life Cycle

With reference to the ISO 14040 standard, the main stages of the environmental life cycle of the product are defined raw material procurement, product manufacturing, product transportation, product use, and product waste.

Calculation

The environmental footprint of this product is calculated using the life cycle assessment software SimaPro 8.2; and based on the Ecoinvent 3 database data, the carbon footprint of each phase is calculated using the IPCC 2013 GWP 100a method.

Production

It includes the refining, manufacturing, transportation of raw materials, as well as the manufacture, assembly and transportation of parts and packaging materials.

Transportation

The route is from the final assembly factory to the Shanghai Airport in China, and then distributed to the warehouses in various continents. Transportation methods include: land, and air.

Use

The period of use is set to 4 years, and the carbon footprint of this phase is calculated based on the data of the ENERGY STAR standard test method.

Disposal

According to the recovery processing vendor model and path calculation of ASUS regional cooperation.

Uncertainty

There are uncertainties in this report caused of the following factors:

1. Uncertainty in modeling carbon emissions due primarily to data limitations.

For the top component contributors to Asus's carbon emissions, Asus addresses this uncertainty by developing detailed process-based

environmental models with Asus-specific parameters. For the remaining elements of Asus's carbon footprint, rely on industry average data and assumptions. Calculation includes emissions for the following life cycle phases contributing to Global Warming Potential (GWP 100 years) in CO2 equivalency factors (CO2e).

2. Impact calculation of production phase including the refining, manufacturing, transportation of raw materials, as well as the manufacture, assembly and transportation of parts and packaging materials are based on the database of SimaPro software, not primary data.
3. Impact calculation of use phase is based on Energy Star test result and is assumed 4 years product life time.
4. Impact calculation of disposal phase is based on WEEE result of similar product.