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INSTITUTE OF PUBLIC & ENVIRONMENTAL AFFAIRS

# Product Carbon Footprint Disclosure and Catalogue (PCFD)



To contribute to the green transformation, and as part of the efforts to building carbon data infrastructure building and constructing global business accountability mechanism, the Institute of Public & Environmental Affairs (IPE) developed and launched the Product Carbon Footprint Disclosure and Catalogue (PCFD) platform in 2023 with technical support from the China City Greenhouse Gas Working Group.

The PCFD platform employs the United Nations Central Product Classification (CPC) method and provides search tags for clothing, food, housing, supplies, travel, as well as industry, agriculture, and services, allowing stakeholders to search publicly accessible product carbon footprint data based on the principles of Life Cycle Assessment (LCA).

Within organizational boundaries, a company's greenhouse gas emissions primarily originate from the entire life cycle of products (including services), encompassing stages such as raw material acquisition, design, production, transportation, delivery, use, and end-of-life treatment. LCA is an internationally recognized environmental management tool and environmental footprint analysis method. Based on LCA, the quantification of product carbon footprints (PCF) helps companies identify the greenhouse gas emissions and removals from raw material extraction to final disposal or recycling, pinpointing high-carbon processes, technologies, and materials. At the same time, PCF results help companies understand the impact of each stage of their product's lifecycle on climate change, benchmark against industry averages and leaders, and implement more targeted emission reduction measures.

IPE hopes the PCFD platform can:

- Provide stakeholders with a one-stop search platform of PCF data publicly disclosed by enterprises, third-party platforms, and journal articles, including some PCF of specific product model. This allows more stakeholders to calculate and disclose PCF data, and to accelerate the global industrial chain's zero carbon transition.
- Support enterprises to calculate PCF, conduct life cycle assessment, and measure Scope 3 greenhouse gas emissions; assist enterprises to identify major product life cycle emission hotspots, benchmarking against similar products, and taking more targeted energy-saving and emission-reduction measures.
- Assist stakeholders to formulate and continuously improve PCF standards (including defining product carbon footprint accounting boundaries, accounting methods, data quality, traceability, and disclosure requirements) and enhance international mutual recognition; assist enterprises in benchmarking and exploring more energy-saving and carbon-reduction potential.
- Assist stakeholders in establishing product carbon labeling standards based on LCA. By clearly marking the PCF data, market mechanisms can be utilized to incentivize enterprises to implement energy-saving and carbon-reduction measures, drive upstream and downstream suppliers to strengthen carbon footprint management, and accelerate the green and low-carbon transition of the supply chain.
- Guide sourcing companies, investors, consumers, and other stakeholders to incorporate PCF into purchasing, investment, and consumption decisions. By promoting green supply chains, green investment and financing, and green consumption, enterprises can be incentivized to reduce carbon emissions in raw material acquisition, production, and transportation, and disclose PCF data. This will contribute to carbon reduction during product use, recycling, and waste disposal stages.



## Policies issued by the Chinese government

- The State Council released the “Action Plan for Carbon Peaking Before 2030” in October 2021, proposing to explore the establishment of carbon footprint standards for key products.
- The National Development and Reform Commission (NDRC), the National Bureau of Statistics, and the Ministry of Ecology and Environment (MEE) released the “Implementation Plan for Accelerating the Establishment of a Unified and Standardized Statistical Accounting System for Carbon Emissions” in April 2022, proposing to strengthen the research work on various carbon accounting methods, such as the carbon footprint of products in key industries.
- On June 4, 2024, the MEE and 14 other ministries released the “Implementation Plan for Establishing a Carbon Footprint Management System”, promoting the release of product carbon footprint accounting standards, the establishment of a product carbon footprint factor database, a product carbon labeling certification system, a product carbon footprint classification management system, and exploring the establishment of a carbon footprint information disclosure system.
- In September 2024, the State Administration for Market Regulation and 3 other ministries issued the “Notice on Conducting Pilot Work for Product Carbon Footprint Certification”, aiming to guide the participation of government, industry, and enterprises all levels in building a unified product carbon footprint labeling system.
- In October 2024, NDRC, MEE and 6 other ministries released the “Work Plan for Improving the Carbon Emission Statistics and Accounting System”, accelerating the development and release of carbon footprint accounting rules and standards of key products, as well as the construction of a national greenhouse gas emission factor database.

## International Policies and Standards

- GB/T 24067-2024 *Carbon footprint of products — Requirements and guidelines for quantification*
- International Organization for Standardization (ISO)
  - ISO 14025 Type III environmental declarations — Principles and procedures
  - ISO 14040/14044 Life cycle assessment — Principles and framework/ Requirements and guidelines
  - ISO 14067 Carbon footprint of products — Requirements and guidelines for quantification
- World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD), *GHG Protocol — The Product Life Cycle Accounting and Reporting Standard*
- British Standards Institution (BSI), PAS 2050: 2008 — *Specification for the assessment of the life cycle greenhouse gas emissions of goods and services*
- European Commission, *The Product Environmental Footprint (PEF) Method*

## • Where does PCFD collect product carbon footprints?

Data sources include publicly disclosed corporate environmental reports, product carbon footprint certificates, product environmental labels, industry reports, journal articles, and open-source third-party platforms such as the International EPD System, China Automobile Industry Chain Carbon Publicity Platform (CPP), Eco Platform. Data from third-party platforms include links to the publishing platforms.

## • What are the criteria for PCFD to collect a PCF data?

PCF data collected in PCFD complies with life cycle assessment and product carbon footprint accounting standards, such as ISO 14040/14044, ISO 14067, PAS 2050, etc., or product environmental footprint quantification requirements or environmental product declaration standards, such as EU PEF, ISO 14025, EN 15804, etc.

## • How frequently PCFD update?

The PCFD platform is committed to updating publicly disclosed product carbon footprint information in a timely manner. If users identify publicly disclosed PCF data that have not been collected into PCFD, or have any questions, please contact us at [gsc@ipe.org.cn](mailto:gsc@ipe.org.cn).

## • What is the relationship between PCFD and CPCD?

China Products Carbon Footprint Factors Database (CPCD), is developed by China City Greenhouse Gas Working Group. IPE and various LCA experts from universities and research institutes contribute to its operation. CPCD aims to assist enterprises in conducting PCF analysis and GHG emissions of Scope 3, Category 1 purchased goods and services.

## • How to calculate product carbon footprint?

The “Product Carbon Footprint Accounting Platform”, developed by IPE, incorporates product life cycle greenhouse gas emission factors originating from China, which can assist enterprises in calculating the greenhouse gas emissions of various products at each life cycle stage.

The Blue Map APP offers a Carbon Footprint Snapshot tool which employs AI to identify product items from photos and generate the embedded carbon emissions data.