WE WILL START AT 10:00 AM (CET)

SESEC VI Webinar 01: China Carbon Footprint standardization and certification

You are ***muted***

Use the ***Q&A or Chat Panel*** to submit your questions

Keep your questions ***short and concise***

Contact us: assistant@sesec.eu

Welcome to our website: https://sesec.eu/

Seconded European Standardization Expert in China (SESEC) Project

SESEC INTRODUCTION

Partners and Role

SESEC is a visibility project co-financed by five European partners

SESEC Partners

- **European Commission (EC)**-The executive body of the European Union; Responsible for proposing legislation, implementing decisions, upholding the treaties and day-to-day management of the EU; DG Grow is the main partner (80%)
- **European Free Trade Association (EFTA)-**Iceland, Liechtenstein, Norway and Switzerland; Intergovernmental organization set up for the promotion of free trade and economic integration to the benefit of its four Member States; None EU members;
- **CEN**-European Committee for Standardization
- **CENELEC**-European Committee for Electrotechnical Standardization
- **ETSI**-European Telecommunications Standards Institute

SESEC INTRODUCTION

A Project co-funded by EC, EFTA, CEN CENELEC & ETSI

- **Promote** European and International standards in China
- **Improve** contacts between Project Partners and different levels of the Chinese administration, industry and standardization bodies
- **Enhance** visibility and understanding of the European Standardization System (ESS) in China.
- **Gather** regulatory and standardization intelligence
- **Undertake** technical lobbying

Goals

- The SESEC initiative supports **EC policy** and **ESOs strategic objectives** in China.
- Our ultimate goal is the enhancement of **EU-China dialogue and cooperation** in the field of standardization.
- It is notably expected to support the Framework Cooperation Agreement in place **between the ESOs and SAC.**

Project’s Priorities

Priorities of SESEC

Horizontal:

- China Standards 2035
- Belt and Road Initiative
- Standardization Reform
- Institutional Changes in Chinese Government
- **Market Access (e.g CCC)**

Digital Transition

- IT in General
- Data
- Artificial Intelligence
- Quantum
- Industrial IoT
- 5G/6G

Green Transition:

- Energy Efficiency
- China RoHS
- Green Product Assessment
- Decarbonization
- New Energy (e.g.Hydrogen)
- Recycling

SESEC’s English Website For European stakeholders

www.sesec.eu

China Carbon Footprint standardization and certification

SESEC
March 2026

CONTENTS

Note: PCF refers to Product Carbon Footprint.

01 *Part One*

China PCF Policy Landscape

Strategic Priority

The CPC Central Committee and the State Council prioritize carbon footprint (PCF) management as a key policy tool to help enterprises **navigate new international challenges, drive green supply chain transformation, and achieve the "Dual Carbon ” goals**.

01 Clear Mandates from the Highest Level

2025 Government Work Report 2024 Central Economic Work Conference explicitly mandated the establishment of a PCF management system;

"15th Five-Year Plan" proposed to improve PCF policies and develop PCF accounting standards.

02 Top-Level Design Driving Implementation

Decision of the CPC Central Committee on Further Deepening Reform and Advancing Chinese Modernization July 2024
PCF system=key component of ecological civilization reform

Opinions on Accelerating the Comprehensive Green Transition of Economic and Social Development **(CPC Central Committee & State Council)** August 2024.
Carbon footprint integrated into supply, consumption, standards and mutual recognition

Work Plan for Accelerating the Establishment of a Carbon Emission Dual Control System **(General Office of the State Council)** August 2024.
Accelerating carbon footprint work with clarified tasks

03 Fully Integrated into the "1+N" Policy System

Carbon footprint requirements are now embedded across the entire “1+N” system — from the core framework document ***Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy (Oct 2021)*** to sectoral plans and supporting infrastructure policies.

2021-2022 — Concept Introduction

Before 2021, “carbon footprint” was barely present in China's policy landscape. 2021-2022 marked the first time it was written into national policy documents, setting the initial direction.

Oct 2021

State Council’s 2030 Carbon Peaking Action Plan

- First national-level mention of "exploring the establishment of life cycle **carbon footprint** standards for key products"

Aug 2022

Industrial Carbon Peaking Implementation Plan issued by Ministry of Industry and Information Technology, National Development and Reform Commission, and Ministry of Ecology and Environment

- Recycling sector: Standardize management of scrap steel, non-ferrous metals, waste paper, plastics, tires and encourage compliant enterprises to disclose **carbon footprints**.
- Green design: Promote life cycle-based green product design and explore product **carbon footprint accounting**.

2023-2024 — System Construction

These two years saw the most intensive policy rollout. Three tracks, including management, standards, and certification, were set in motion simultaneously.

Track	Landmark Policy	Date	Key Points
Management	*Opinions on Accelerating the Establishment of a Product Carbon Footprint Management System*	Nov 2023	First dedicated carbon footprint policy
	Implementation Plan for Establishing a Carbon Footprint Management System	May 2024	**Target**: by 2027, 100 PCF accounting standards; Carbon footprint factor database and label certification & tiered management systems initially built
Standards	*Action Plan for Further Strengthening the Construction of the Standard Measurement System for Achieving Carbon Dioxide Peaking and Carbon Neutrality (2024-2025)*	Aug 2024	Accelerate the development of PCF and carbon labeling standards
	***GB/T 24067-2024** General Rules for Quantifying Product Carbon Footprint*	Sep 2024	China's *ISO 14067 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification*
	Guidelines for Developing Product Carbon Footprint Accounting Standards	Dec 2024	Standardized standard-setting process
Certification	*Notice on Product Carbon Footprint Label and Certification Pilot*	Sep 2024	Launched the pilot initiative for PCF certification

2025-2026 — Critical Breakthrough Period

Milestone 1: Electricity carbon footprint Factors — Regular Updates Established

- Jan 2025: First-ever official release of 2023 Electricity carbon footprint Factors (MEE, NBS, NEA) — **0.6205 $kgCO_2e/kWh$** (national average)
- Oct 2025: Second annual release — 2024 Electricity carbon footprint Factors — **0.5777 $kgCO_2e/kWh$**
- ↓ 6.9% decrease in one year, reflecting China's rapid energy transition

Two Milestones

Milestone 2: PCF of EV Traction Battery Reporting Launched

- Dec 2025: *Notice on Carrying out Carbon Footprint Reporting for Automotive Traction Batteries*
- Pilot phase from notice release to December 31, 2026; mandatory reporting beginning January 1, 2027

Application of PCF Expanded

- Government procurement
- e-commerce platforms
- Green finance
- supply chain
- Circular Economy

EU-China PCF Policy Comparison

1

Core Objective

EU: Achieve 2050 climate neutrality. Carbon footprint policies drive economy-wide emissions reductions and ensure enforceability of climate targets.

China: Achieve 2030 carbon peak and 2060 carbon neutrality. Carbon footprint policies guide industrial low-carbon transition to support domestic climate goals.

2

Policy Approach

EU: Mandatory regulations (Battery Regulation, CBAM, ESPR) establish carbon footprint requirements as a condition for market access, creating binding obligations for supply chains.

China: Top-level design combined with pilot implementation. Policy guidance supports the development of domestic carbon footprint systems, focusing on standards and capacity building.

3

Compliance Mechanism

EU: Future CE marking requirements. Market access requires compliance. EU ETS provides a price signal for carbon emissions.

China: **Voluntary certification currently** predominates. Initiatives such as "one audit, two certificates" aim to facilitate mutual recognition with international schemes and reduce compliance complexity.

02 *Part Two*

PCF Certification Pilot Program

PCF Certification Pilot Program-Timeline

Sept 2024

SAMR, MEE, NDRC and MIIT jointly launch pilot initiatives for PCF labeling and certification: targets **11 key product categories**, including lithium batteries, PV products, and steel

CNCA selected certification bodies for the PCF labeling pilot.

Jan 2025

26 certification bodies selected for pilot (state-owned, private, foreign-invested DEKRA) by CNCA

25 provinces, autonomous regions, and municipalities across the country such as Beijing, Tianjin, selected for the pilot by SAMR, MEE, NDRC and MIIT

Mar 2025

CNCA issued ***General Implementation Rules for PCF Labeling and Certification (Trial)*** and **China Carbon Footprint Label**.

June 2025

Pilot catalog expanded — 17 products by SAMR, MEE, and MIIT

Sept 2025

17 Specific Implementation Rules for Product Carbon Footprint Labeling and Certification (Trial) released by SAMR, MEE, and MIIT

PCF Certification Pilot Program- Certification Process

General Implementation Rules for PCF Labeling and Certification (Trial) sets the PCF certification process.

- **Certification Mode:** Initial Inspection + Carbon Footprint Verification + Surveillance

1. Application	Enterprises submit application documents, including **business qualifications, product process flowcharts, lists of raw/auxiliary materials, carbon footprint data and information collection list, and emission reduction plans**
2. Acceptance	Certification body reviews application and starts certification process
3. Planning	Certification body develops inspection plan and forms inspection team
4. Document Review	Certification body reviews submitted documents and requires corrective actions if necessary
5. On-Site Inspection	Assessment of enterprise assurance capability; Product consistency inspection (covers all certification units)
6. Carbon Footprint Verification	Conduct verification based on **GB/T 24067 (ISO 14067)** and corresponding technical standards, covering data collection, quantification, data quality, etc.; issue verification report
7. Approval	Certification body comprehensively evaluates document review, on-site inspection, and verification results; issues certificate if requirements are met
8. Surveillance	Regular follow-up inspections to maintain certificate; **Certificate Validity: 2 years**

PCF Certification Pilot Program-Pilot Catalog

Pilot Certification Catalog for Product Carbon Footprint Labeling (First Batch)		
No.	**Pilot Products**	**Certification Catalog**
1	Lithium Batteries	Consumer Lithium – ion Batteries
2		Small - power Lithium – ion Batteries
3		Large - power Lithium – ion Batteries
4		Energy - storage Lithium – ion Batteries
5	Photovoltaic Products	Photovoltaic Modules
6	Steel (including Crude Steel)	Blast Furnace - Converter Long – process Steel Products
7		Electric Furnace Short – process Steel Products
8		Ferroalloys
9	Textiles (including Cashmere Products)	Textile Products
10	Electrical Appliances (Air Conditioners)	Room Air Conditioners
11	Electrical Appliances (Computers)	Desktop Microcomputers
12	Electrical Appliances (Laptops)	Portable Computers
13	Electrical Appliances (Motors)	Small - power Motors
14	Tires	Tires
15	Electrolytic Aluminum	Electrolytic Aluminum
16	Cement	Cement
17	Wood Products	Artificial Boards and Wooden Floors

PCF Certification -Implementation Rules and Applicable Standards

China’s Product-specific Implementation Rules for Product Carbon Footprint Labeling Certification (Trial)		
Implementation Rule No.	**Applicable Product**	**Corresponding Technical Standard**
CNCA-CFP-01:2025	Consumer Lithium-ion Batteries	T/CQAE 12002 – 2024 Greenhouse gases – Quantification methods and requirements for carbon footprint of product – Lithium-ion battery
CNCA-CFP-02:2025	Small - power Lithium – ion Batteries	
CNCA-CFP-03:2025	Large - power Lithium – ion Batteries	T/CSAE 411 – 2025 Greenhouse gases – Quantitative methods and requirements of product carbon footprint – Automotive power batteries
CNCA-CFP-04:2025	Energy - storage Lithium – ion Batteries	T/CQAE 12002 – 2024 Greenhouse gases – Quantification methods and requirements for carbon footprint of product – Lithium-ion battery
CNCA-CFP-05:2025	Photovoltaic Modules	SJ/T 11926 – 2024 Product carbon footprint – Product category rules – Photovoltaic modules
CNCA-CFP-06:2025	Blast Furnace - Converter Long – process Steel Products	T/CISA 469 – 2024 Greenhouse gases Quantitative methods and requirements for carbon footprint of product-Blast furnace-converter long process steel products
CNCA-CFP-07:2025	Electric Furnace Short – process Steel Products	T/CISA 470 – 2024 Greenhouse gases -Quantitative methods and requirements for carbon footprint of product – Electric furnace short process steel products
CNCA-CFP-08:2025	Ferroalloys	T/CISA 472-2024 T/FIAC 0005-2024 Greenhouse gases - Quantitative methods and requirements for carbon footprint of product - Ferroalloys
CNCA-CFP-09:2025	Textile Products	FZ/T08006 – 2024 Carbon footprint of products-Product category rules-Textile products
CNCA-CFP-10:2025	Room Air Conditioners	GB/T 46027-2025 Greenhouse gases -Quantification requirements and methods of product carbon footprint - Room air conditioners

PCF Certification -Implementation Rules and Applicable Standards

China’s Product-specific Implementation Rules for Product Carbon Footprint Labeling Certification (Trial) (Continued)		
Implementation Rule No.	**Applicable Product**	**Corresponding Technical Standard**
CNCA-CFP-11:2025	Desktop Microcomputers	SJ/T 11736-2019 Carbon footprint of products - Product category rule - Desktop microcomputer
CNCA-CFP-12:2025	Laptop microcomputer	SJ/T 11735-2019 Carbon footprint of products - Product category rule – Laptop microcomputer
CNCA-CFP-13:2025	Small - power Motors	T/CNLIC 0185 – 2024 Greenhouse gases - Quantification methods and requirements of product carbon footprint – Small-power motors
CNCA-CFP-14:2025	Tyres	T/CPCIF 0391-2024 Greenhouse gases-Quantification methods and requirements for carbon footprint of products-Tyres
CNCA-CFP-15:2025	Electrolytic Aluminum	GB/T 44905-2024 Greenhouse gas -Quantification requirement and method of product carbon footprint - Electrolytic aluminum
CNCA-CFP-16:2025	Cement	T/CBMF 277-2024 Greenhouse gas -Quantification methods and requirements for carbon footprint of products - Cement
CNCA-CFP-17:2025	Wood-based Panels and Wooden Flooring	T/CBMF 280-2024 Greenhouse Gas-Quantification methods and requirements for carbon footprint of products - Wood-based panels and wooden flooring

Most products: Sector standards (e.g., SJ/T, FZ/T) and association standards (e.g., T/CQAE, T/CSAE)
Only room air conditioners and electrolytic aluminum: National standards (GB/T)

03

Part Three

China’s PCF Standardization Progress

Standardizing the Development of PCF Standards

Guiding Document: ***Guidelines for the Development of Product Carbon Footprint Accounting Standards***

Release Date: December 28, 2024 Issuing Authorities: MEE, NDRC, SAMR, etc.

- **Guiding Principle**: "Prioritize urgent needs, advance steadily “
- **Dual-track Approach**: Simultaneous development of standards for production-side (primary products) and consumption-side (end-use products)
- **Priority Areas**: Basic energy, raw materials, transportation, **key foreign trade products (EU Requirements)**
- **National Targets**: 100 national standards by 2027; 200 national standards by 2030
- **International Alignment**: Promote domestic-international standards coordination and mutual recognition
- **Technical Committee**: SAC/TC548 (Carbon Management) leads, jointly with other sectoral technical bodies

Standardizing the Development of PCF Standards

Guiding Document: ***Guidelines for the Development of Product Carbon Footprint Accounting Standards***

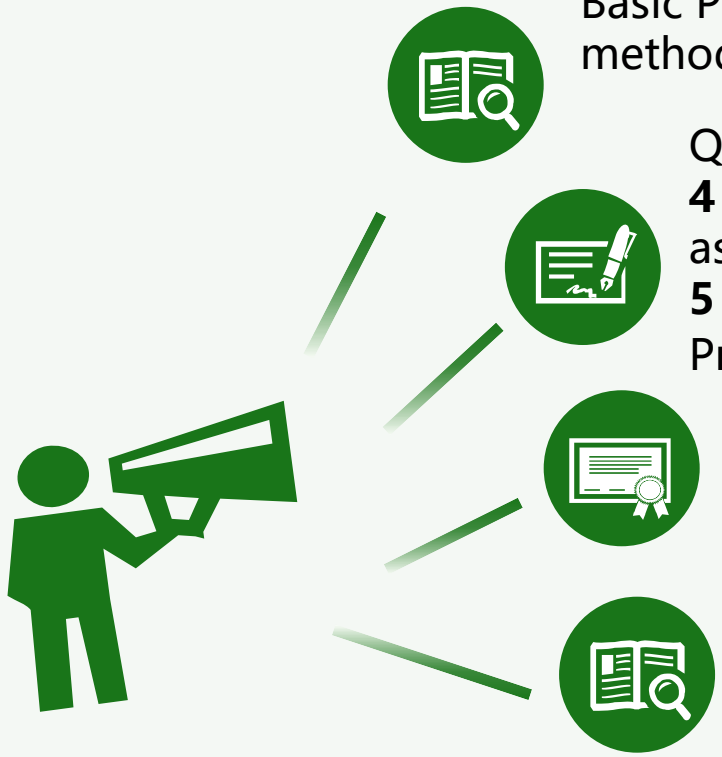
Release Date: December 28, 2024 Issuing Authorities: MEE, NDRC, SAMR, etc.

Key Technical Requirements	
Standard Name	Unified: "Greenhouse gases—Quantification method and requirements for carbon footprint of products—[Product name]"
Alignment with General Standard	All technical content must align with GB/T 24067-2024
Accounting Boundaries	B2C: Cradle-to-grave | B2B: Cradle-to-gate
Data Requirements	• Primary data mandatory for specified stages • Secondary: stats → literature → estimates (with sources noted) • Green certificates & Power Purchase Agreements recognized
Factor Data Quality	• Priority: Verified measured data → Official data → Industry experience → Literature • Quality-assured factors included in National Carbon Footprint Factor Database

General Standard Release | GB/T 24067-2024

Greenhouse gases—Carbon footprint of products—Requirements and guidelines for quantification *Release Date: Aug 23, 2024* *Implementation Date: Oct 1, 2024* ***Modified adoption of ISO 14067***

General standard for product carbon footprint accounting, filling domestic gap



Basic Principles: Full life cycle perspective, iterative approach, priority of scientific methods, completeness, consistency, accuracy, transparency

Quantification Method:
4 steps: Goal & scope definition, Life cycle inventory analysis, Life cycle impact assessment, Life cycle interpretation
5 stages: Raw materials → Production → Distribution → Use → End-of-life
Product category rules, boundary selection principles, calculation methods

Reporting: Carbon footprint report requirements and basic content

Review & Declaration: Critical review, carbon footprint declaration, Framework for product-specific standards

Mod ISO 14067 – No major changes, Editorial adjustments, Alignment with Chinese standard system, Differences in data use, Greater flexibility in application,

Comparison of Product Carbon Footprint Frameworks

(GB/T 24067 vs ISO 14067 vs EU PEF)

Aspect	GB/T 24067 (China)	ISO 14067 (International)	PEF (EU)
Full Name	Product Carbon Footprint Standard	Carbon Footprint of Products	Product Environmental Footprint
Issuing Body	SAC (China)	ISO	European Commission (JRC)
Nature	National standard (recommended)	International standard	EU policy methodology
Methodology Basis	ISO 14040/44	ISO 14040/44	ISO 14040/44 + additional EU rules
Scope	Product carbon footprint (PCF)	Product carbon footprint (PCF)	Multi-impact (incl. carbon footprint)
System Boundaries	Flexible (cradle-to-gate / grave)	Flexible	Strictly defined per PEFCR
Allocation Rules	General principles	General principles	Prescribed (often economic allocation)
Data Requirements	Flexible	Moderate	Strict (Data Quality Rating - DQR)
Background Data	Open (various databases)	Open	Mandatory use of EF database
Regulatory Role	Domestic guidance	Voluntary global reference	Increasingly regulatory (ESPR, CBAM future)
Industry Rules	Limited	Limited	Mandatory PEFCR (sector-specific rules)
Flexibility	High	Medium	Low (highly standardized)
EU Market Acceptance	Limited	Accepted baseline	Required / preferred

PCF Technical Committees Structure

Currently, 34 TCs and 6 industry federations/others are developing PCF national standards.

TC548: National Technical Committee on Carbon Management (*Established by and reporting to the Ministry of Ecology and Environment and mirrors ISO/TC207/SC7 Greenhouse gas and climate change management and related activities and ISO/TC 265 Carbon dioxide capture, transportation, and storage)*

Role: Core platform for carbon footprint standards development

Characteristic: Leads development of carbon footprint standards for products with strong cross-sector applicability

Other Professional Technical Committees: Sector-Specific Division

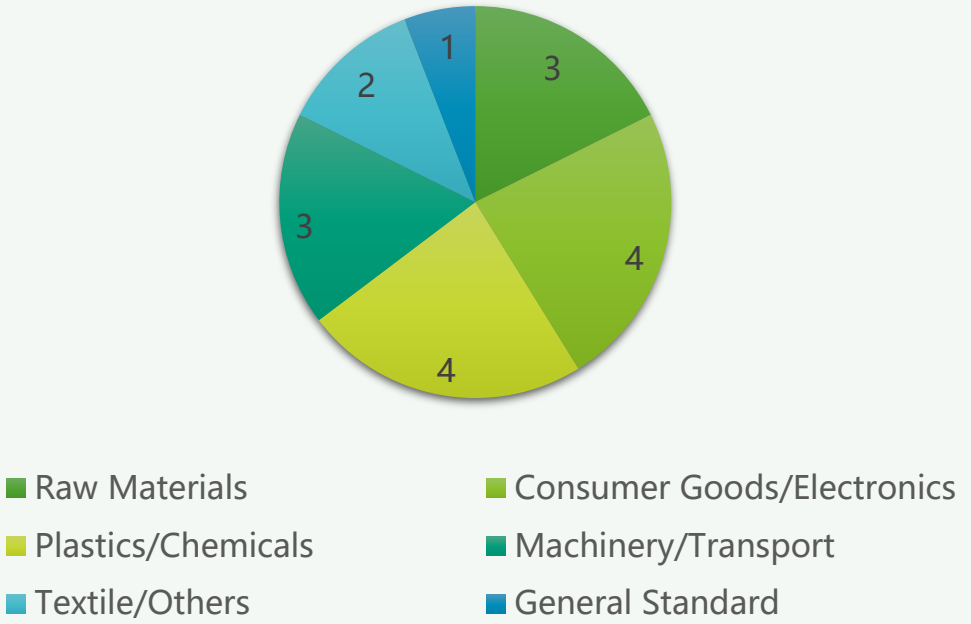
Category	Representative Committees/Organizations	Scope
Raw Materials	TC243 (Non-ferrous Metals), TC42 (Coal), TC63 (Chemistry)	Aluminum processing, coal, chemical raw materials
Intermediate Products	TC183 (Steel), TC48 (Plastics Products), China Building Materials Federation	Steel, plastic products, cement, glass
End Products	TC114 (Road Vehicles), TC46 (Household Electric Appliances)	Electric vehicles, washing machines
Energy	TC355 (Petroleum)	Crude oil, Liquefied Nature Gas

China’s PCF Standards Progress (as of March 2026)

——Standard volume and covered areas

Among the 17 published standards, **four, covering rare earth magnets, steel products, recycled plastics, and furniture** will take into effect in 2026.
Rare earth permanent magnet materials and **Iron and steel products**: Aug 1, 2026
Mechanical recycling recycled plastic products and **Furniture**: May 1, 2026

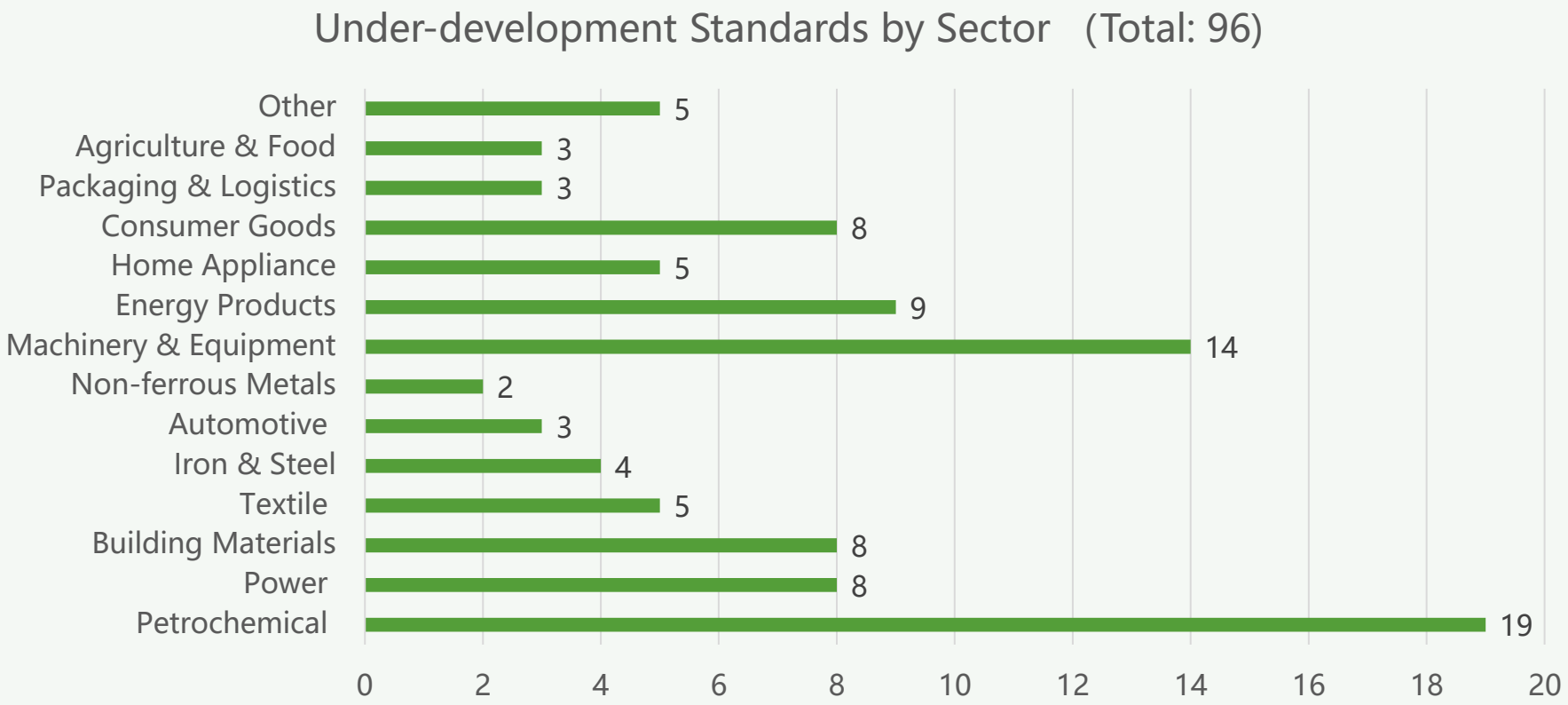
Published Standards by Sector (17 Total)



Product Examples:
Raw Materials: Steel products, Electrolytic Aluminum
Consumer Goods/Electronics: Electrical appliances, Furniture, Air Conditioners, Lighting products
Plastics/Chemicals: Plastic products, Recycled plastics, Biobased plastics
Machinery/Transport: Internal combustion engines, Road vehicle carbon footprint labels
Textile/Others: Man-made fibres, Livestock products
General Standard: GB/T 24067-2024

China’s PCF Standards Progress (as of March 2026)

——Under-development Standards



- Petrochemicals lead (19).
- Energy sectors, with 8 power standards + 9 energy products standards, cover power generation of coal, gas, solar, wind, water, and nuclear.
- “New Three” (EVs, Lithium-ion Batteries, and PV products) achieve full supply chain coverage (9 standards across materials, components, vehicles, charging, and power generation).
- High-energy-consuming industries (including building materials, iron and steel and petrochemical) are fully included (31 standards).
- Consumer goods (including home appliance and textile) accelerate (18 standards).

Comparison with EU CBAM Coverage

CBAM Products vs. China's PCF Standards		
CBAM Category	CBAM Products	China's PCF Standards Progress
Iron & Steel	Iron, steel, ferroalloys	✅ **Fully covered** • Published: GB/T 47064-2026 Steel Products • Under-development: Ferroalloys, Metallurgical Coke, etc. (4 standards)
Cement	Cement, clinker	✅ **Fully covered** • Under-development: Cement, Lime (2 standards)
Fertilizers	Ammonia, nitric acid, fertilizers	✅ **Fully covered** • Under-development: Ammonia, Urea (2 standards)
Aluminum	Aluminum products	✅ **Fully covered** • Published: GB/T 44905-2024 Electrolytic Aluminum • Under-development: Aluminum Processing Products
Electricity	Electricity	✅ **Fully covered** • Power generation factors published (Jan 2025) • Under-development: Coal, Gas, PV, Wind, Hydro, Nuclear power (6 standards)
Hydrogen	Hydrogen	✅ **Covered** • Under-development: Hydrogen standard

Key Takeaways

- **Robust Standard System:** GB/T 24067-2024 (modified adoption of ISO 14067) provides unified foundation, with 17 published and 96 under-development national standards.
- **Clear Roadmap:** "Prioritize urgent needs, advance steadily" principle with targets of 100 standards by 2027 and 200 by 2030.
- **Full CBAM Coverage:** China's PCF standards now cover all six EU CBAM product categories (steel, cement, fertilizers, aluminum, electricity, hydrogen).
- **Broad Industry Coverage:** Standards span raw materials, energy, "New Three" (EVs, batteries, PV), consumer goods, and machinery.
- **International Alignment: Modified adoption** of ISO 14067, recognition of green certificates/Power Purchase Agreements, and active participation in international standard-setting.

Part Four

04 Case Studies: Traction Battery - EU-China Accounting Differences

Automotive Traction Battery Carbon Footprint Declaration

On Dec 31, 2025, the MIIT released the *Notice on Carrying out Carbon Footprint Reporting for Automotive Traction Batteries*.

中华人民共和国工业和信息化部
Ministry of Industry and Information Technology of the People's Republic of China

阳光小信 无障碍 手机端 邮箱 微信 微博 RSS订阅

请输入关键字

首页 组织机构 新闻发布 政务公开 政务服务 互动交流 工信数据

首页 > 政务公开 > 政策文件 > 文件发布 > 通知

发文机关：工业和信息化部办公厅
标　　题：工业和信息化部办公厅关于开展汽车动力电池碳足迹申报工作的通知
发文字号：工信厅通装函〔2025〕551号
成文日期：2025-12-30　　发布日期：2025-12-31
发布机构：装备工业一司　　分　　类：汽车工业行业管理

工业和信息化部办公厅关于开展汽车动力电池碳足迹申报工作的通知

工信厅通装函〔2025〕551号

各动力电池包生产及进口企业、各相关核查机构、各相关单位：

为贯彻落实党中央、国务院关于碳达峰、碳中和重大决策部署，按照《加快构建碳排放双控制度体系工作方案》（国办发〔2024〕39号）等文件要求，加快探索建立符合我国国情的汽车动力电池（以下简称动力电池）碳足迹管理体系，更好支撑产业绿色转型和高质量发展，工业和信息化部决定开展动力电池碳足迹申报工作。有关事项通知如下：

Pilot Phase

From issuance of the notice to December 31, 2026
(Each enterprise must complete declaration for at least 5 representative products covering all battery chemistries used by the enterprise.)

Mandatory Phase

Effective January 1, 2027

Scope of Declaration: Applicable to automotive traction batteries with a rated energy > 2 kWh

Declaring Entities:

- ✓ Traction battery pack manufacturers
- ✓ Traction battery pack importers
- ✓ Road vehicle manufacturers that assemble battery packs in-house

Declaration Process

1. Account Registration: Register on the "Automotive Traction Battery Carbon Footprint Information Platform"
2. Submit Data Quality Control Measures
3. Report Activity Data: Submit product information in accordance with accounting rules
4. Calculate Carbon Footprint: Based on the ***20243775-T-339 standard Greenhouse Gases — Quantification methods and requirements for carbon footprint of products — Traction batteries used in electric vehicles***
5. Third-Party Verification: Upload verification report to the platform

Traction Battery Carbon Footprint Accounting Standard

20243775-T-339 standard Greenhouse Gases — Quantification methods and requirements for carbon footprint of products — Traction batteries used in electric vehicles

Responsible TC: TC114 (Road Vehicles), with **TC548** as the Co-Responsible Committee

Lead Drafting Organizations: Contemporary Amperex Technology Co., Limited (CATL), China Automotive Technology and Research Center Co., Ltd. (CATARC)

Current Status: Under Review

The standard is developed within the framework of international carbon accounting principles, tailored to the specific characteristics of China's traction battery industry:

International Standards/Rules	Relevance
ISO 14067	Foundational international standard for PCF quantification
PAS 2050	Pioneering methodology for PCF accounting
EU PEFCR	EU Product Environmental Footprint Category Rules
CFB-EV	EU Carbon Footprint Rules for Electric Vehicle Batteries

VS

EU's 2024 JRC draft delegated act Batteries for electric vehicles – carbon footprint methodology

Comparison: EU-China Carbon Footprint Accounting of EV Traction Battery

China and the EU share the **same core logic** for calculating battery carbon footprints:

- ✅ Unified Formula: **Carbon Footprint (kg CO_2e/kWh) = Total Lifecycle GHG Emissions ÷ Total Energy Output**
- ✅ Aligned Boundaries: Both cover raw material acquisition, production, distribution, and end-of-life (**use phase excluded**)
- ✅ Common Goal: Drive transparency and decarbonization across the battery value chain

Bottom line: At the methodological framework level, there is no fundamental disagreement.

The real divergence lies in **how the parameters are set** — and that directly impacts final numbers:

Parameter	EU Rules (Draft)	China Rules (Draft)
Electricity	✓ **Directly connected renewable electricity: Based on actual energy type** ✓ Grid electricity: Mandatory use of national average electricity consumption mix factor	✓ **Directly connected renewable electricity: Based on actual energy type** ✓ **Power Purchase Agreements & Green Certificates recognized** ✓ Regional grid factors also accepted
Total Energy Calculation	**Fixed denominator** (Pre-set cycles)	**Performance-based denominator** (Cycle life × K-value[1], rewards longevity)
Recycling Accounting	**Circular Footprint Formula** (Rewards *existence* of recycling systems)	**Recycled Content Method** (Direct credit for *using* recycled content)

[1] ***K-value:*** *A calibration factor in the China methodology that adjusts total energy output based on real-world calendar aging (differentiated by vehicle type), ensuring the calculation reflects actual battery performance rather than idealized lab data.*

Recommendations for European Enterprises

✅ **Clarify Rule Differences**
- EU and China differ fundamentally in green power recognition, lifetime calculation, and recycling accounting
- Conduct market-specific carbon footprint calculations

✅ **Adjust Green Power Strategy**
- In China, green certificates and power purchase agreements (PPAs) are recognized as valid proof of low-carbon electricity
- Secure local green power procurement mechanisms in China in advance

✅ **Leverage Long-Life Battery Technology**
- China's methodology uses a performance-based approach that rewards actual battery lifespan
- Long-life technology not only strengthens market competitiveness but also yields lower carbon footprint values

✅ **Prepare for Recycling Compliance**
- EU focuses on existence of recycling systems; China focuses on use of recycled content
- Engage with local recycling infrastructure in China and ensure traceability of recycled materials

✅ **Build Data and Verification Capacity Early**
- China will implement mandatory declaration management starting January 1, 2027
- Register early on the MIIT Information Platform, familiarize with the reporting process, and establish partnerships with accredited third-party verifiers


SUMMARY

Summary of China’s PCF Policy and Standardization

Dimension	Key Progress
Policy Framework	Carbon footprint fully integrated into the "1+N" policy system; 2025 marks the turning point from top-level design to operational implementation
Standards System	GB/T 24067-2024 (modified adoption of ISO 14067) published and implemented; 17 published, 96 under development; target of 100 national standards by 2027, 200 by 2030
Certification Pilot	PCF labeling and certification pilot launched in 2024, covering 17 product categories, 25 provinces, 26 certification bodies; certificate validity of 2 years
Sector Breakthrough	Traction batteries first to launch mandatory declaration: pilot phase until end of 2026, regular management from 2027; all six CBAM product categories now covered by China's PCF standards

Outlook: From Institutional Framework to Full Operation

Trend 1: Expanding Product Scope

- Following traction batteries, PV, steel, electrolytic aluminum, and other key export products will be gradually included
- A regular carbon footprint management system for major traded products expected by 2027

Trend 2: Accelerating Standards Development

- Next two years will see intensive standards issuance; target of **100 national PCF standards by 2027**
- Standards coordination and international mutual recognition will become the next priority

Trend 3: Continuous Improvement of Electricity Carbon Footprint Factors

- 6.9% decrease from 2023 to 2024 reflects rapid energy transition
- Will continuously lower carbon footprint values of products manufactured in China, enhancing competitiveness of green manufacturing
- Will discuss and negotiate with EU on China’ s Electricity Carbon Footprint Factors

Trend 4: Strong needs for EU-China Coordination

- Methodological alignment
- Green power recognition, recycling accounting, and data interoperability are potential breakthrough areas for bilateral coordination

Trend 5: Carbon Footprint Shifting from Compliance Cost to Competitive Tool

- Gradual integration into government green procurement, green finance, and e-commerce platform evaluation systems
- Low-carbon products will gain market premium; carbon management capability becomes a core competitive differentiator

Thank You

Q& A

Seconded European Standardization Expert in China

Dr.. Betty Xu

Seconded European Standardization Expert in China (SESEC)

A project co-funded by CEN, CENELEC, ETSI, EC and EFTA

Beijing Office:
Room 1005,The Oriental Place, #9 East Dongfang Road,
Chaoyang, Beijing, 100106, P.R. China
Phone: +86 10 8527 5366-802
Fax: +86 10 8527 6363
Mobile: +86 185 118 20197
E-mail: betty.xu@sesec.eu