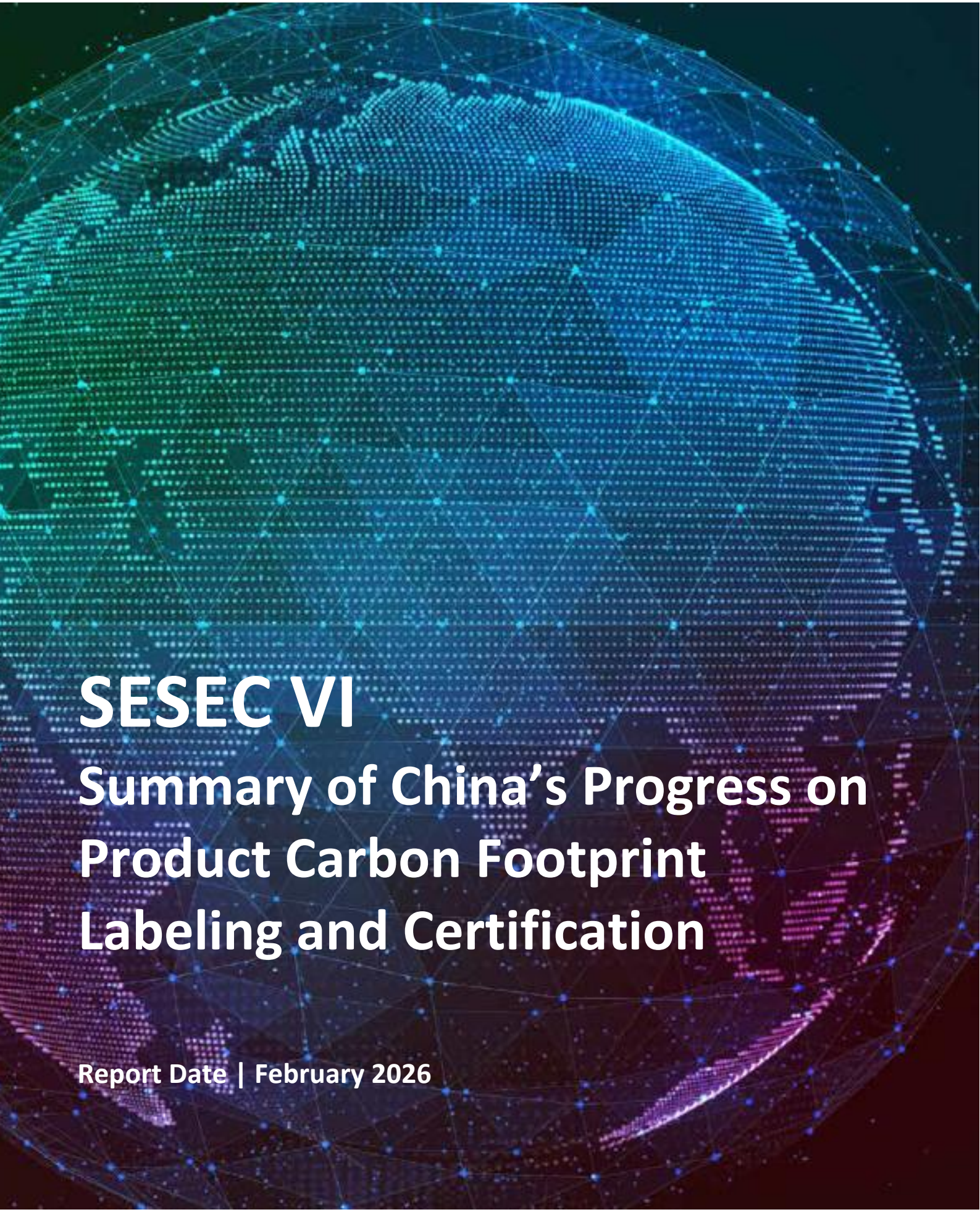

SESEC VI

Summary of China's Progress on Product Carbon Footprint Labeling and Certification

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Seconded European Standardisation Expert in China
(SESEC)

Summary of China's Progress on Product Carbon Footprint Labeling and Certification

On February 5, 2026, the Seconded European Standardization Expert for China (SESEC) convened the 2026 EU–China Standardization Roundtable and New Year Reception in Beijing. During the roundtable, Mr. Wang Peng, Senior Engineer from China Certification & Accreditation Institute (CCAI) of the State Administration for Market Regulation (SAMR), delivered a detailed presentation on the significant advancements in China's product carbon footprint (PCF) labeling and certification initiative. This report summarizes his presentation, which outlined a methodical, top-down approach driven by national policy, progressing through structured pilot programs, and underpinned by a robust technical framework.

1. Introduction

Tackling climate change and fostering green, low-carbon development is a common mission and PCF labeling and certification serves as a critical bridge between comprehensive lifecycle carbon management and informed green consumer choices. For China, this initiative is a strategic imperative tied to the nation's "Dual Carbon" goals of peaking carbon emissions by 2030 and achieving carbon neutrality by 2060. China's approach is not merely about compliance but about constructing a green development pathway tailored to its national circumstances while actively responding to the global call for a green transition.

2. Policy Background

The development of China's PCF labeling and certification system has always been guided by strong top-level design and supported by robust policy documents, forming a well-structured and coherent logic for institutional development.

2.1 Foundational Policy: The 2023 SAMR Guidelines

Following the guiding documents, including:

- *Opinions of the CPC Central Committee and the State Council on Working Guidance for Carbon Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy*
- *Action Plan for Carbon Peaking Before 2030*
- *Implementation Plan for Advancing Carbon Peaking and Carbon Neutrality Work within the Market Regulation System*

SAMR issued the ***Implementation Opinions on Coordinating the Use of Quality Certification to Serve the Work of Achieving Carbon Peaking and Carbon Neutrality*** in 2023. This document proposes the core principles for establishing a "dual carbon" certification system, including **the combination of direct and indirect carbon-related categories**, and **the integration of nationally unified initiatives with independently implemented institutional schemes.** This has laid the policy foundation for the development of a PCF labeling and certification system.

2.2 Policy Escalation (since 2024)

The year 2024 saw a rapid intensification of policy support:

July 2024: The Third Plenary Session of the 20th CPC Central Committee formally listed "establishing a PCF labeling and certification system" as a key national reform task.

July 2024: The State Council issued the *Work Plan for Accelerating the Establishment of a Dual Control System of Carbon Emission*, which laid out concrete steps such as setting up the PCF labeling and certification system and launching pilot programs in selected cities with a focus on key products.

August 2024: *Opinions of the Central Committee of the CPC and the State Council on Accelerating the All-round Green Transformation of Economic and Social Development* reiterates the establishment of a PCF management system and a PCF labeling and certification system.

December 2024: The Central Economic Work Conference highlighted this initiative as a crucial step for green development.

March 2025: Premier Li Qiang's Government Work Report underscored the necessity and urgency of steadily advancing carbon goals and establishing the PCF labeling and certification system.

Throughout the process of building this institutional framework, SAMR has steadfastly pursued a dual focus on addressing immediate challenges and achieving long-term goals. On the one hand, it aims to resolve current problems including the lack of unified carbon footprint management standards, inconsistent accounting methods, and insufficient information disclosure. On the other hand, it serves broader objectives such as fostering green transformation in industrial and supply chains, guiding green consumption, and facilitating international trade. This approach ensures that the resulting system is both suited to China's national context and internationally compatible.

3. Practical Exploration: The "Pilot First, Then Gradual Rollout" Approach

To ensure the scientific, standardized, and orderly implementation of the PCF labeling and certification system, the SAMR, in collaboration with relevant government departments, has adopted a pragmatic approach of "pilot first, then gradual rollout." By focusing on key regions, key products, and key institutions, they have carried out systematic pilot initiatives, thereby accumulating experience and solidifying the foundation for the nationwide expansion of the system.

3.1 Coordinated Launch of the Pilot Program

In September 2024, SAMR, together with the Ministry of Ecology and Environment (MEE), the National Development and Reform Commission (NDRC), and the Ministry of Industry and Information Technology (MIIT), jointly launched the national pilot program for PCF labeling and certification.

The pilot is guided by three principles: alignment with leading international and domestic standards, a focus on key sectors, and strengthened coordination. The pilot program initially targeted **11 product categories** characterized by high carbon emissions, a robust industrial base, and an urgent need for carbon management. These include **lithium batteries, photovoltaic (PV) products, and steel, textiles, electronic appliances, tires, cement, electrolytic aluminum, urea, ammonium phosphate, and wood products**.

The core objectives of the pilot program are:

- To identify weak points in carbon reduction across production and circulation.
- To enhance the carbon footprint management capabilities and accountability of enterprises.
- To encourage collaborative carbon footprint management across entire industrial chains.
- To generate replicable best practices that can inform a unified national PCF labeling and certification system.

The organizational model is a collaborative one, led by the government but driven by market forces, with active participation from enterprises, certification bodies, and industry associations.

3.2 Expanding the Pilot Scope: Regions and Certification Bodies

To ensure the coverage and representativeness of the pilot work, the SAMR has steadily advanced the selection of pilot lists and participating certification bodies through a combination of voluntary applications and expert technical reviews.

Certification Bodies: In January 2025, the National Certification and Accreditation Administration (CNCA) announced

the selection of **26 certification bodies** to participate. This diverse group includes state-owned, private, and foreign-invested institutions, blending deep domestic expertise with international carbon management experience.

Geographic Scope: Also in January 2025, the official list of pilot regions was released, covering **25 provinces**, **autonomous regions, and municipalities**. The geographic distribution is broad, including developed eastern coastal areas as well as industrial and energy hubs in central and western China.

Industry Coverage: The selected products span both strategic emerging sectors (new energy, advanced manufacturing) and traditional energy-intensive industries (steel, cement, chemicals). This ensures the pilot findings are relevant and adaptable across China's diverse economic landscape.

3.3 Collaborative Implementation and Initial Progress

Implementation is managed through cross-departmental coordination mechanisms at the provincial level, with tailored local policies to support participating companies. A national-level dynamic tracking and evaluation system is in place to monitor progress, identify effective practices, and facilitate knowledge sharing among pilot regions through exchanges and site visits.

Since the launch of the pilot program, all participating entities have responded actively. Pilot enterprises have taken the initiative to strengthen the accounting and management of their product carbon footprints. Certification bodies have delivered certification services in strict accordance with technical requirements. Industry associations have played a bridging role in promoting industry self-discipline, collectively forming a sound working framework.

To date, the pilot program has achieved initial results. On-site inspections for PCF labeling and certification have been completed for some of the pilot products, providing valuable practical data for further refinement and improvement of the system.

4. Technical Support: Ensuring Accuracy, Consistency, and Compatibility

A robust technical support system is the cornerstone of the entire initiative. SAMR has adhered to the principle of "**Four Unifications"—unified product catalogue, unified standards, unified procedures, and unified label**—to build a scientific and reliable framework.

4.1 Unified Rules and a Distinctive Label

A major milestone was reached in March 2025 with the release of the ***General Implementation Rules for Product Carbon Footprint Labeling and Certification (Trial)*** and the official **China Product Carbon Footprint Label** (as shown below).

General Implementation Rules: This document provides the nationwide standard for certification, detailing core requirements such as carbon footprint accounting boundaries, data collection protocols, quantification methods, and the certification process.

The Label: The label features a "footprint" graphic, a globally recognized symbol for carbon impact. It displays the quantified carbon footprint in clear numerical format and includes a QR code for traceability, allowing consumers and stakeholders to access detailed certification information. This design promotes transparency for companies and provides accessible low-carbon information for consumers.

Figure 1. The Format of the China Product Carbon Footprint

4.2 Product-Specific Rules and a Growing Catalogue

To meet the carbon footprint quantification requirements of different products, the CNCA has developed a certification technical system that adopts a categorized approach, following a "**basic general standards + product-specific standards**" model.

In June 2025, SAMR, MEE, and MIIT jointly released the first batch of the ***Pilot Certification Catalogue***, listing **17 product types**, including consumer lithium-ion batteries, PV products, steel, cement, and tires. These products cover not only key carbon emission sectors such as energy production and basic materials, but also products closely related to green consumption, including new energy products and electronic goods. As such, they hold strong representativeness and demonstrative significance.

Pilot Certification Catalogue for Product Carbon Footprint Labeling (First Batch)

No.	Pilot Products	Certification Catalogue
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)	Laptop microcomputer
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

Following this, CNCA published 17 specialized implementation rules. These rules provide detailed technical specifications for each product, including precise quantification methods, data source requirements, and emission factor selection criteria, all tailored to the product's unique production processes and energy use.

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
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

These implementation rules primarily reference sector standards (e.g., SJ/T, FZ/T) and association standards (e.g., T/CQAE, T/CSAE) for most products, while national standards (GB/T) are applied only for room air conditioners and

electrolytic aluminum. Notably, these specialized rules were developed by drawing on international standards like *ISO 14067:2018 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification* and EU norms, while adapting them to fit China's specific industrial context, ensuring results are both internationally comparable and domestically relevant.

4.3 Institutional Support: Working Groups and Guidance

To ensure smooth implementation, SAMR established dedicated **Working Groups for the Pilot Program** in April 2025. These groups comprise technical experts from industry, certification bodies, and academia, providing technical consultation, answering queries, and resolving disputes.

Concurrently, SAMR published the first guidance document, the *Product Carbon Footprint Labeling Pilot "Knowledge Q&A"*, available for public download. This document uses a Q&A format to address common practical concerns from enterprises and certification bodies regarding pilot scope, procedures, data quantification, and label usage, serving as an authoritative operational guide.

4.4 Commitment to Openness and International Compatibility

A central theme of the presentation was the commitment to building an open and compatible system.

Alignment with International Standards: The technical framework heavily references global standards such as *ISO 14067:2018 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification*, ensuring consistency in core methodologies like accounting boundaries and lifecycle assessment.

Data Integrity: While aligning internationally, the system prioritizes the use of primary, site-specific data from enterprises to guarantee the authenticity and reliability of the certification results.

Goal of Mutual Recognition: By building an open technical system, China aims to position its certification as a valuable part of the global green conformity assessment landscape. The ultimate goal is to facilitate international trade, reduce green trade barriers, and lay the groundwork for future mutual recognition agreements with partners like the EU.

5. Conclusion

China has made substantial and systematic progress in establishing a national PCF Labeling and Certification system. The initiative has successfully transitioned from high-level policy ambitions to concrete, on-the-ground implementation.

Key achievements to date include:

- **A Robust Policy Framework**: A clear, top-down policy trajectory has been established, anchoring the certification system within China's core "Dual Carbon" strategy and providing a stable foundation for long-term development.
- **A Comprehensive Pilot Program**: A nationwide, multi-sectoral pilot program is underway, covering a diverse range of 25 regions, 26 certification bodies, and 17 key product categories. This pragmatic approach ensures that the final national system will be tested and refined using real-world data.
- **A Mature Technical Infrastructure**: The release of the General Implementation Rules, a unified national label, a detailed product catalogue, and 17 product-specific implementation rules provides the essential technical toolkit for consistent and credible certification. The establishment of dedicated working groups and guidance documents further strengthens this infrastructure.
- **A Commitment to International Compatibility**: By aligning its core methodologies with international standards like ISO 14067, China is proactively building a system designed for future global interoperability. This openness is a crucial step toward facilitating international trade and mutual recognition with major trading partners.

In essence, China is not merely discussing the idea of carbon labeling but has actively constructed the policy, practical,

and technical pillars required to make it a functioning reality. This system is poised to play a critical role in driving domestic industrial decarbonization, empowering green consumer choices, and positioning China as a key player in the evolving global landscape of green trade and climate governance. The progress reported signifies a foundational step in China's comprehensive economic and social green transition.

Introduction of SESEC Project

The Seconded European Standardisation Expert in China (SESEC) is a visibility project co-financed by the European Commission (EC), the European Free Trade Association (EFTA) secretariat and the three European Standardisation Organizations (CEN, CENELEC and ETSI). Since 2006, there has been four SESEC projects in China, SESEC I (2006-2009). SESEC II (2009- 2012), SESEC III (2014-2017), SESEC IV (2018- 2022) and SESEC V (2022-2025). Dr. Betty XU is nominated as the SESEC expert and will spend the next 36 months on promoting EU-China standardisation information exchange and EU-China standardisation cooperation.

The SESEC project supports the strategic objectives of the European Union, EFTA and the European Standardisation Organizations (ESOs). The purpose of SESEC project is to:

- Promote European and international standards in China;
- Improve contacts with different levels of the Chinese administration, industry and standardisation bodies;
- Improve the visibility and understanding of the European Standardisation System (ESS) in China;
- Gather regulatory and standardisation intelligence.

The following areas have been identified as sectorial project priorities by the SESEC project partners: Internet of Things (IoT) & Machine-to-Machine(M2M) communication, communication networks & services, cybersecurity & digital identity, Smart Cities (including transport, power grids & metering), electrical & electronic products, general product safety, medical devices, cosmetics, energy management & environmental protection (including eco-design & labeling, as well as environmental performance of buildings).