

D4. DETAILED RESULTS OF THE TRIAL PHASE OF A VOLUNTARY CARBON LABELING PROGRAM

Executive Summary

This report presents the detailed results of the trial phase of the Voluntary Carbon Labeling Program (VCLP) implemented in Vietnam between January and April 2026. The trial represents a critical step in operationalizing the national carbon labeling framework, providing practical insights into the feasibility, challenges, and scalability of product-level carbon footprint (CFP) assessment in the Vietnamese industrial context.

The trial phase was conducted under the project “Technical Support for the Design and Trial phase of the Voluntary Carbon Labeling Scheme in Vietnam”, implemented with the support of the Southeast Asia Energy Transition Partnership (ETP) under the United Nations Office for Project Services (UNOPS), in collaboration with the Ministry of Agriculture and Environment (MAE) and the Department of Climate Change (DCC).

Trial phase scope and implementation

The trial phase focused on three priority sectors namely, (i) food processing, (ii) pulp and paper, and (iii) chemicals, selected based on their emission intensity, export relevance, and readiness for greenhouse gas (GHG) monitoring, reporting, and verification (MRV). A total of 10 enterprises were selected through a structured screening process aligned with sectoral priorities, regulatory requirements, and enterprise readiness.

The trial phase activities included:

- Capacity building and training workshops for enterprises and stakeholders
- Stakeholder consultations were conducted with accreditation and verification bodies
- Development of data collection templates, calculation tools, and draft Product Category Rules (PCRs)
- On-site data collection and validation at participating enterprises
- Calculation of Product Carbon Footprints (PCF) using a standardized methodology
- Preliminary verification and analysis of results

Two training workshops were conducted to raise awareness and strengthen technical capacity among enterprises. The training results indicate that while awareness of climate policies is relatively high, technical capacity for CFP assessment and data management remains limited, particularly in relation to international standards and product-level accounting.

Methodological approach

The PCF assessment methodology applied in the trial phase is based on internationally recognized frameworks, including the GHG Protocol (Product Standard) and International

Organization for Standardization (ISO) 14067. It follows a Life Cycle Assessment (LCA) approach with a cradle-to-gate boundary.

The methodology incorporates:

- Definition of system boundaries and functional units
- Use of primary data from enterprises where available
- Application of emission factors from Intergovernmental Panel on Climate Change (IPCC) guidelines and national sources
- Allocation methods for multi-output processes
- Verification and quality assurance procedures

While the methodology is aligned with international standards in principle, the trial phase results highlight that full compliance with ISO 14067 requirements is not yet achievable under current data conditions. Limitations related to system boundary completeness, data availability, and supply chain coverage affect the robustness of results.

Key findings from the trial phase

a. Data availability and quality are the primary constraints

The most significant challenge identified during the trial phase is data availability, granularity, and reliability. Key issues include:

- Difficulty in disaggregating facility-level data to product-level
- Limited availability of primary data for upstream supply chains (Scope 3)
- Inconsistencies across internal data sources (production, accounting, energy)
- Lack of standardized data management systems within enterprises

As a result, the following observations were made:

- Scope 1 and Scope 2 emissions are generally estimated with medium confidence
- Scope 3 emissions are characterized by high uncertainty due to reliance on secondary data and assumptions

These limitations significantly affect the completeness, comparability, and verification readiness of PCF results.

b. Carbon emission hotspots

The analysis of trial phase results identifies several key emission drivers:

- Energy consumption (electricity and fuels) is the dominant source of emissions in most sectors
- Raw material-related emissions represent a significant share of total emissions, particularly in chemicals and food processing
- Process emissions play an important role in certain sectors but are often underreported or insufficiently captured

The findings confirm that emission profiles are highly sector-specific and require tailored methodological approaches, including the development of sector-specific PCRs.

c. Gap between policy awareness and technical readiness

The training and trial phase activities reveal a clear gap between high awareness of climate policies and commitments and limited technical capacity for implementation at the enterprise level.

Enterprises are generally not yet equipped with:

- Robust data management systems
- Clear data ownership and governance structures
- Standardized methodologies for carbon accounting

This gap represents a major barrier to scaling up carbon labeling and integrating it into broader climate policy instruments.

d. Implications for MRV and Emissions Trading Scheme (ETS) readiness

The trial phase findings have important implications for the development of Vietnam's national MRV system and future ETS. While PCF assessment provides valuable insights into emission sources across the value chain, the current limitations in data systems indicate that most enterprises are not yet ETS-ready.

Key gaps include:

- Lack of traceable and auditable data systems
- Limited supply chain data integration
- Insufficient Quality Assurance (QA)/Quality Control (QC) procedures
- Inconsistent methodologies across enterprises

Addressing these gaps will be essential to ensure the credibility and functionality of future carbon market mechanisms.

The trial phase demonstrates that:

- Carbon labeling is technically feasible and relevant in the Vietnamese context
- However, its robustness is constrained by data systems rather than methodology
- Significant improvements are required in data management, standardization, and institutional capacity

Importantly, the trial phase results should be considered as indicative and learning-oriented, rather than fully compliant CFP declarations under international standards.

Recommendations and way forward

Based on the trial phase results, the following priority actions are recommended for implementation of the VCLP:

- i. Strengthen enterprise-level data systems and governance**
 - Establish standardized enterprise-level data collection and management systems with clear departmental responsibilities and internal MRV procedures.
 - Designate dedicated coordination functions to oversee carbon-related data management, QA/QC, cross-department coordination, and engagement with external verifiers.
 - Improve data consistency, traceability, auditability, and enterprise readiness for carbon labeling, MRV, and future ETS participation.

- ii. Develop national databases and digital infrastructure**
 - Develop Vietnam-specific emission factor databases and centralized digital platforms for reporting, validation, and verification.
 - Integrate carbon labeling data systems with national MRV and future ETS infrastructure.
 - Define clear roles among ministries, technical agencies, industry associations, verification bodies, and enterprises for methodological development, data governance, QA/QC, and standardized reporting.
 - Strengthen system consistency, transparency, scalability, and national carbon market readiness.

- iii. Standardize methodologies and PCRs**
 - Expand and refine sector-specific PCRs
 - Ensure consistency in system boundaries, allocation methods, and reporting formats

- iv. Enhance capacity building**
 - Continue targeted training programs focusing on practical implementation
 - Support enterprises in transitioning from awareness to operational capability

- v. Integrate supply chain data**
 - Promote data sharing mechanisms with suppliers and logistics providers
 - Gradually improve Scope 3 data coverage

- vi. Adopt a phased implementation approach**
 - Start with simplified methodologies and gradually increase requirements
 - Align carbon labeling with MRV development and ETS roadmap

Overall conclusion

The trial phase provides a strong and practical starting point for developing a national carbon labeling system in Vietnam. It shows that key tools such as PCF methods, data templates, and draft PCRs are already in place and can be used in priority sectors. However, these tools still need further review and improvement with inputs from industry associations and line ministries to make sure they are practical and easy to use.

The trial phase also shows that data is a major challenge. While companies have started preparing GHG inventory data, they will need technical support and incentives to convert this data into accurate and consistent PCF results. Strengthening company capacity and improving data systems will be important for expanding the program.

Overall, carbon labeling can help improve product labeling transparency and support exports. With further improvements and support, it can also contribute to Vietnam's wider climate goals, including building a strong MRV system and a reliable domestic carbon market.