

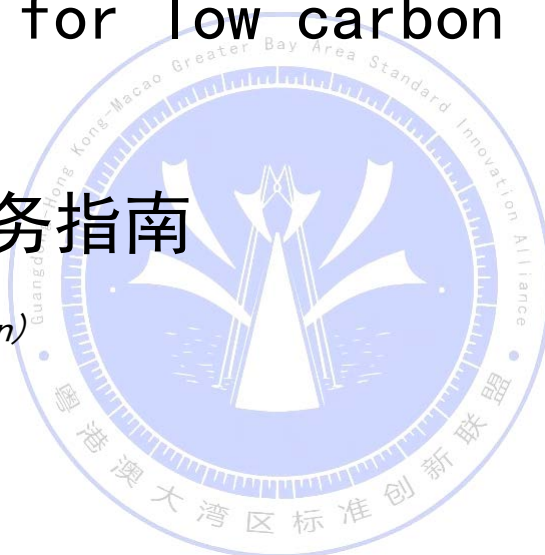
Social Organization Standard

T/GBA 020—2024

Guidelines for low carbon logistics services

低碳物流服务指南

(English Translation)



Issue date: 2024-08-26

Implementation date: 2024-09-01

Issued by Guangdong-Hong Kong-Macao Greater
Bay Area Standards Innovation Alliance

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Foreword

This document is drafted in accordance with the rules set forth in the GB/T 1.1-2020 *Directives for Standardization — Part 1: Rules for the Structure and Drafting of Standardizing Documents*.

This document is proposed by the Intelligent Logistics Committee of the Guangdong-Hong Kong-Macao Greater Bay Area Standards Innovation Alliance.

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This is the first release.



Guidelines For Low-carbon logistics Service

1 Scope

This document stipulates the service capacity , service provision, service evaluation and improvement of low-carbon logistics services.

This document is applicable to guide low-carbon logistics service activities.

2 Normative references

The contents of the documents listed below form essential parts of this document through normative references within the text. For referenced documents with specified dates, only the versions corresponding to those dates are applicable to this document. For undated referenced documents, the most recent version, including all amendments, is applicable to this document.

GB/T 18354—2021 *Logistics terminology*.

3 Terms and Definitions

GB/T 18354—2021 and the following terms and definitions apply to this document.

3.1 low carbon logistics

The concept of "sustainable development" and "carbon emission reduction" is integrated into logistics activities such as transportation, storage, packaging, loading and unloading, circulation processing, distribution, information processing, etc., and advanced logistics technology and management methods are adopted to achieve the purpose of improving resource utilization efficiency, reducing environmental impact and optimizing system benefits.

3.2 low carbon logistics service

The process and results of a series of low-carbon logistics activities implemented to meet carbon emission reduction and other goals.

3.3 joint distribution

A distribution method jointly implemented by multiple enterprises or other organizations after integrating the goods needs of customers.

[Source: GB/T 18354—2021, 4.38]

3.4 automatic guided vehicle; AGV

The vehicle is equipped with electromagnetic or optical guidance devices, computer devices, and safety protection devices, which can automatically drive along the set path and have the function of transferring goods.

[Source: GB/T 18354—2021, 5.34]

4 Basic principles

4.1 Low-carbon energy

Control the use of fossil energy, strengthen the use of non-fossil energy such as electricity, solar energy, wind energy, and hydrogen energy in logistics operations, and reduce carbon emissions.

4.2 Efficient operation

Improve energy efficiency by planning, optimizing, and matching resources to each part of the service process

4.3 Service Intelligence

Intelligent facilities such as automated three-dimensional warehouses, automatic guided vehicle automatic handling equipment, automatic transportation equipment, automatic sorting equipment, as well as intelligent technologies such as big data, cloud computing, Internet of Things, and artificial intelligence are used to improve service efficiency and accuracy.

5 Service capacity

5.1 Service providers

Low-carbon logistics service providers should have the following capabilities:

- a) The management system required to provide low-carbon logistics services;
- b) The service personnel required to provide low-carbon logistics services;
- c) The necessary facilities and equipment to provide low-carbon logistics services;
- d) The management information system required to provide low-carbon logistics services;
- e) The operational qualifications required to provide low-carbon logistics services.

5.2 Management system

The management system includes, but not limited:

- a) Low-carbon logistics services-related development goals and implementation requirements;
- b) a quality performance evaluation system for low-carbon logistics services;
- c) Fire safety and emergency response systems for low-carbon logistics services.

5.3 Service staff

5.3.1 Service staff should include low-carbon logistics management staff, operators, management information system maintenance staff, etc.

5.3.2 Service staff should be trained in low-carbon logistics related knowledge and ability, and meet relevant qualifications.

5.3.3 Service staff should strictly implement low-carbon logistics implementation requirements, safety, emergency treatment and others.

5.4 Facilities and Equipment

Low-carbon logistics service providers should be equipped with facilities and equipment to meet the needs of low-carbon logistics services, including energy metering instruments, intelligent dispatch centers, energy-saving lighting equipment, electric logistics vehicles, etc.

5.5 Management Information System

5.5.1 Low-carbon logistics service providers should be equipped with management information systems such as warehouse management, transportation management, and order management to achieve paperless operations and document preservation.

5.5.2 Low-carbon logistics service providers should establish a low-carbon logistics information management platform to provide relevant low-carbon information inquiry, push, tracking, backup and other services.

6 Service provision

6.1 Low-carbon transport services

6.1.1 Before transport service

Before the transportation service, it is advisable to adopt the following schemes:

- a) Optimize the transportation route based on relevant optimization software, combined with customer distribution, vehicle type, cargo type, etc., to minimize transportation time and distance;
- b) Select vehicles with appropriate specifications according to the amount of goods transported, and load the goods reasonably to maximize the utilization rate of vehicles;
- c) Adopt fuel-efficient vehicles, or new energy vehicles such as electric vehicles and hydrogen fuel vehicles.

6.1.2 In transport service

In the transportation service, it is advisable to adopt the following schemes:

- a) Adopt common distribution, multi-modal transport and other modes of transport to improve transport efficiency;
- b) Carry out low-carbon driving to ensure that vehicles run at high fuel efficiency speeds and reduce the occurrence of accidents;
- c) Monitor vehicle utilization, fuel consumption rate, etc.

6.1.3 After transport service

After the transportation service, it is advisable to adopt the following scheme:

- a) Carry out regular maintenance of the vehicle;
- b) Monitor and calculate the carbon footprint during transportation and optimize it continuously .

6.2 Low-carbon warehousing services

6.2.1 Before warehousing services

Before the warehousing services, it is advisable to adopt the following solutions:

- a) The construction location of the warehouse is convenient to transportation, reducing the energy consumption of cargo collection, transit and other links;

- b) Use insulation materials to build warehouses to reduce heat preservation energy consumption;
- c) The warehouse adopts photovoltaic, wind power and other new energy generation methods, and adopts energy-saving bulbs and other energy-saving equipment;
- d) Warehouse construction to ensure good ventilation, rational use of natural ventilation.

6.2.2 In warehousing services

In the warehousing services, it is advisable to adopt the following solutions:

- a) Use AGV, robotic arm and other intelligent equipment, as well as big data, AI and other intelligent technologies to reduce the damage to goods, while reducing energy consumption through "lights out" operation;
- b) Use standardized pallets for warehousing operations;
- c) Adopt efficient warehouse layout and planning, implement inventory management methods and optimize picking plans to minimize the distance of goods moving within the warehouse and reduce the damage to goods;
- d) For perishable and other special goods, through the principle of first-in-first-out and other precise management, to minimize the loss of goods;
- e) Adopt intelligent technologies such as big data, cloud computing, Internet of Things, and artificial intelligence to manage goods and reduce sluggish inventory;
- f) Adopt the inventory sharing model and deliver goods nearby.

6.2.3 After warehousing services

It is advisable to monitor and calculate the carbon footprint of the storage process and continuously optimize it.

6.3 Low-carbon packaging services

6.3.1 Use reusable products such as recyclable packaging boxes for packaging.

6.3.2 Use packaging that conforms to the product size or flexible packaging to prevent excessive packaging.

6.3.3 Use packaging that matches the pressure capacity of the goods to avoid the return of goods damaged during transportation.

6.3.4 Use RFID, bar code and other technologies to trace the source of the whole link of packaging production.

6.4 Low-carbon distribution services

6.4.1 Before delivery service

Before the delivery service, it is advisable to adopt the following solutions:

- a) It is advisable to reasonably plan the delivery center, and the construction location should be as close to the end consumer as possible;
- b) It is advisable to formulate a delivery plan and reduce the number of deliveries by means of centralized distribution.

6.4.2 In delivery service

In the delivery service, it is advisable to use the following solutions:

- a) It is advisable to use intelligent equipment such as drones and unmanned vehicles for terminal delivery, and if manual delivery is required, it is advisable to use low-carbon methods

such as cycling or walking;

b) Contact the customer to determine the specific time to avoid running in vain.

6.4.3 After delivery of the service

It is advisable to monitor and calculate the carbon footprint of the delivery process and continuously optimize it.

6.5 Low-carbon information services

Adopt intelligent technologies such as big data, cloud computing, Internet of Things, and artificial intelligence to realize the intelligent operation of the low-carbon logistics information management platform.

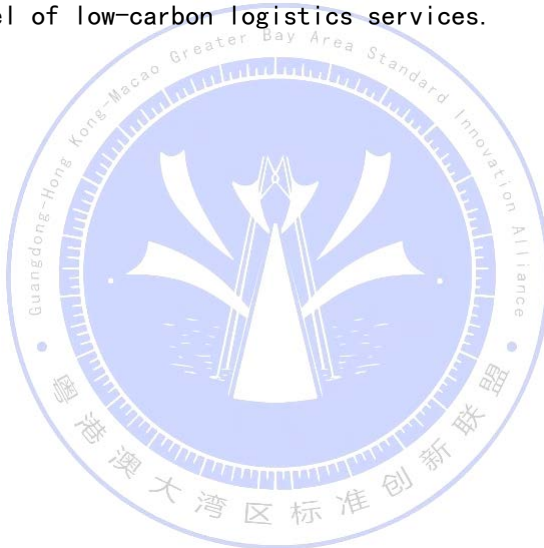
7 Service Evaluation and Improvement

7.1 Service Evaluation

The evaluation of low-carbon logistics services should be carried out from the aspects of carbon footprint, carbon efficiency, and the proportion of clean energy used in the whole process and each link.

7.2 Service Improvements

Based on the results of the service evaluation, low-carbon logistics service providers should analyze the gap with the low-carbon target, formulate improvement measures and implement them, so as to improve the level of low-carbon logistics services.



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