

German Green Logistics Management Practice and its Enlightenment to China

Chen Jian^{1,a,*}, Guo Sijing^{1,b} and Zeng Youhua^{1,c}

¹ International Business Faculty, Beijing Normal University, Zhuhai, China
a:email:cjstacey@126.com,b.email:wunanchen@126.com,c.email:429776453@qq.com

*corresponding author: Chen Jian

Keywords: Green Logistics, Express Delivery, Energy Consumption, German DHL.

Abstract: This paper analyzes the logistics business volume, energy consumption and current development status of China's logistics industry, and finds out that China's logistics industry has high energy consumption, at the same time, lots of companies have not implemented carbon emission measurement, lacking of green innovative technology equipment, and weak in national environmental awareness. By studying the development status of green logistics in Germany and their existing standards, laws and regulations of Germany's logistics and transportation industry, the authors gets the conclusion that Germany's transportation industry with the largest carbon emissions has made targets in terms of vehicles, freight routes, warehousing, sorting, energy conservation, and strict planning. Finally, this paper proposes green logistics management recommendations including improving service, perfection of system, and building China's logistics park, in line with China's national conditions, hoping to promote the sustainable development of China's green logistics industry.

1. Introduction

Green logistics is the logistics service starting from the three standards of “low energy consumption, low pollution and low emission”. It is a logistics activity including transportation handling, loading and unloading sorting, express packaging, and information process to industrialize logistics resources^[1].

2. China's logistics Development

In 2017, China's State Post Bureau issued the "13th Five-Year Plan for the Development of Express Delivery Industry"^[2], and proposed to basically complete the express delivery service system of Pratt & Whitney urban and rural areas, advanced technology, high quality service, safe and efficient, green and energy saving in 2020^[3]. The 2018 State Post Bureau issued the "Green Packaging Guide for Express Delivery Industry (Trial)", which stated that it should adhere to the goal of standardization, reduction and recyclability of packaging, gradually select low-weight packaging materials, establish a green supply system, and promote packaging recycling.^[4]

2.1 China's Logistics Business Development

Since the data of China's logistics industry is mainly reflected in the volume of express delivery business, the current volume of express delivery business represents the current status of the logistics industry. The express delivery industry refers to the logistics company collecting, transporting, sorting and distributing the express delivery parts at home and abroad by means of sea, land and air transportation, and delivering the goods to the company customers in a point-to-point manner and as quickly as possible. In the hands of customers, it is an important part of the logistics industry. In the environment of rapid development of China's e-commerce economy, the volume of express delivery business has also gradually increased.

2.2 Energy Emissions of China's Logistic Business

The output of logistics products mainly depends on transportation. According to the latest data, the total social logistics cost-to-GDP ratio was 14.5% in 2018. According to the cost data of 2018, the total logistics cost in China is relatively high, of which the transportation cost is 31,000 yuan, an increase of 8.3% year-on-year, accounting for half of the total cost^[5]. In the total cost of social logistics, the volume of logistics and transportation is huge, and in this process, energy consumption and carbon emissions are also rising.

2.3 Problem Analysis of China's Green Logistics Development

2.3.1 High Energy Consumption

The cost of China's logistics industry is high. According to the data of the Ministry of Transport, the current energy efficiency of road transport vehicles in China is lower than that of the world's advanced level. China's average energy consumption is about 4% to 8% higher than that of developed countries, especially diesel consumption.

2.3.2 Unconfirmed Carbon Emission Measurement System

Although China issued the industry standard for the measurement method of greenhouse gas emissions from express delivery services in 2014^[10], various logistics companies did not measure the carbon emissions of the transportation industry according to this method, nor did they disclose the measurement of greenhouse gas emissions, and put time and funds into place.

2.3.3 Weak National Environmental Awareness

Under the new environment, China's logistics enterprises have launched green packaging "returning plans" and other green activities, and invested in huge recycling bins, recyclable packaging and other green products, but because the nationals do not have strong environmental awareness, they have taken environmental protection. Boxes, continue to use undegradable plastic tape, cardboard boxes, foam paper, etc. on a large scale.

2.3.4 Logistics Companies Lack Green Technology Equipment

Although domestic well-known logistics companies, including SF, Yuantong, and Zhongtong,

have made green development an annual strategic goal, they have not been effective due to limitations in technology and equipment. Green packaging, etc., will be updated at regular intervals to install aerodynamic equipment.

3 German Green Logistics Management

As the most advanced country in Europe's logistics development, Germany's green logistics development has played a driving role in the German logistics economy. German logistics has basically formed a complex industry of standardization, informationization, networking and technology. Under the requirements of laws and regulations, logistics companies with strong competitiveness such as DHL and DPWN have been formed, and their logistics technology and information network have been used for reference.

3.1 German Green Logistics Standard

The German logistics industry has standardized the industry development standards from laws and regulations, and has formulated norms from the transportation industry with the largest carbon emissions. The Road Freight Transportation Law and the Cargo Transportation and Logistics Action Plan have clearly defined the cargo transportation route plan. Different modes of multimodal transport such as the carbon emission classification plan for transport vehicles and the intermodal standard for internal transport and sea transport ^[2].

3.2 German DHL Logistics Green Strategy

3.2.1 DHL Green Logistics Company

As a leader of German logistics companies, DHL Logistics has an innovative breakthrough and reference for the development of green logistics. DHL has a wide coverage and average service functions, including four main logistics links: supply chain, freight, parcel post, and express delivery, all accounting for 23%-27% of the service function income distribution structure. Secondly, the international market share of the DHL industry is 27 times that of China's SF International business, accounting for about 50% of its total business ^[2].

3.2.2 Carbon Emissions Calculator

In 2016, DHL launched an innovative green service product: Carbon Emissions Calculator, which is designed to allow customers to calculate the relevant factors related to transportation products on the official website through transportation routes, transportation vehicles, package parcels, etc. when using the logistics transportation function ^[5].

3.3 Construction of German Logistics Park

The German Logistics Park is an important cargo sorting and distribution center for various forms of transportation. Since the establishment of the Bremen GVZ in 1985, it has grown to 35, forming a German-centric service. The construction of the German logistics park is to improve the efficiency and use the PPP mode of operation for the EU logistics alliance.

4 Enlightenment and suggestion

4.1 Implement carbon emission measurement system

Strengthen the implementation of carbon emission measurement system, and conduct energy management within the scope of industry standards for measuring high energy consumption. Establish a prosecution department to regularly and irregularly check greenhouse gas emissions measurement data and solutions.

4.2 Research on logistics company technology and services

China's logistics enterprises should develop information-based intelligent logistics, fully study the development of information network, and optimize the infrastructure construction of enterprises and storage bases.

4.3 Improve the construction of China's logistics park

Under the “One Belt, One Road” construction and development platform, the construction of green logistics parks has become an important fulcrum for logistics development. According to China's 2018 city express business statistics, the top five cities are Guangzhou, Jinhua, Shanghai, Shenzhen and Hangzhou. Taking these five cities as an example, they are divided into two areas: one is the Pearl River Delta Logistics Park; the other is the Yangtze River Delta Logistics Park. If the construction of the Pearl River Delta Logistics Park is spread out to Guangzhou and Shenzhen as the two centers, the main logistics enterprises in China, SF, Jingdong, Tmall and Santong, will enter the logistics park through government policy assistance and subsidies, and the site will be selected at the airport.

4.4 Enhance national green environmental awareness

In addition to policy support, China's green logistics development is also inseparable from the national green environmental awareness and the social responsibility of the green development of logistics enterprises.

5 Conclusion

The rapid development of China's logistics industry has gradually become an indispensable part of China's economic system. Under the international background of green development, China's green logistics development is still in an extensive development mode, and it is not mature for the three aspects of green logistics technology, research direction and logistics park construction.

References

- [1]Wang Changqiong. *Preliminary Study on the Background and Development Countermeasures of Green Logistics*[J].*Logistics Technology*,2002(06):39-40.
- [2] Ren Qiwen. (2018) *Research on the development of low carbon logistics industry in China by low carbon logistics industry*[J]. *Environmental Science and Management*, 43(9): 41-44.

- [3] Tang Zhongming, Zhou Ling. (2016) *An Empirical Study on the Impact of Logistics Industry Development on Low Carbon Economy*[J]. *Ecological Economy*, 32(11): 84-87.
- [4] Zhao Yuhua. (2017) *International Experiences and Development Countermeasures of China's Logistics Parks* [J]. *Business Economics Research*, (12): 94-95.
- [5] Department of Energy Statistics, National Bureau of Statistics. *China Energy Statistics Yearbook 2017* [M]. 2017 edition. Beijing: China Statistics Press, 2017: 101-358.
- [6] DHL technical carbon emission report and transportation related emission calculator [EB/OL]. (2016-04) [2019-02-12].[Http://www.dhl-carboncalculator.com/#/login](http://www.dhl-carboncalculator.com/#/login).