Green Logistics Management In The Context Of Low-carbon Economy

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Abstract-Low-carbon economy based on low energy consumption, low pollution, low emission based economic model, is a great progress of human society in the two previous civilizations. Low carbon economy is an emerging in the contemporary a new economic form and mode of development. Green logistics is to reduce the pollution of the environment, reduce the consumption of resources as the goal, the use of advanced logistics technology planning and implementation of transport, storage, handling, distribution processing, distribution, packaging and logistics activities. Green logistics is a new subject in recent years was proposed, on this issue has important theoretical significance and practical significance.This paper will focus on the development of low-carbon economy and green logistics in history and in a low carbon economy in the background, the foreign advanced countries is how to carry out the development of green logistics and green logistics development implications for China to analysis.

Keywords-component; formatting; style; styling; insert (key words

I. INTRODUCTION

Low-carbon economy takes the scientific development concept as the instruction, adopts a variety of innovative transformation way to enable enterprises to maximize the implementation of the energy conservation and emission reduction so as to achieve common progress of economic development and environmental protection. “Low-carbon economy" is an advanced economic development pattern, which makes greenhouse gas emissions as low as possible. More countries pay more attention to the development of low-carbon economy as more and more serious greenhouse effect.

Logistics industry is a very important link in the low-carbon mode, mainly because of the huge energy consumption of logistics itself, and large amounts of carbon dioxide emissions. According to statistics, the cost of energy accounts for at least 40% of the logistics cost, and even higher proportion. Transportation energy consumption has become a big drawback of logistics industry.

Through the combination of theory and practice, this paper will study the principle, the development process and issues of low-carbon economy and the start of environmental logistics and related issues. What’s more, the paper will make a comparative analysis on the status of domestic and foreign research on the environmental logistics, how to develop environmental logistics in China under the background of low-carbon economy, and reasonable views.

II. OVERVIEW OF LOW-CARBON ECONOMY

A. The concept of low-carbon economy

The so-called low-carbon economy is a development type that is to reduce carbon consumption and emissions of greenhouse gases through the advanced technology and other effective means while implementing the sustainable development earnestly so as to achieve economic and social development and ecological environment protection

B. . Foreign study of advanced low-carbon economy and environmental logistics

Development of low-carbon economy is a response to the global climate change, to relieve the energy crisis,and an inevitable choice of implementation of comprehensive, balanced and sustainable economic and social development. In 2003, the UK for the first time put forward the concept of "low-carbon economy". All countries in the world are actively exploring the development of low-carbon economy, climate change and goal, method, model and technical system for ensuring energy security

1) The study of low-carbon economy and environmental logistics in US

.The United States is the world's largest economy, with a highly developed economy, and one of the first having logistics industry. Because of America's unrestrained logistics policy and highly developed logistics business, the development of environmental logistics is more important to the United States. Under the background of such developed logistics business, US government continuously introduces related policy laws and regulations, and is bound to create a modern logistics industry. In the process of logistics, most businesses in the United States apply many advanced technologies, which provide strong technical support and assurance for logistics activities going green.

2) The study of low-carbon economy and environmental logistics in Europe

Europeans have long followed the concept of logistics, and applied a number of advanced technologies in the process of logistics management, being the pioneer in the process of implementation of environmental logistics. The

European freight forwarders (FFE), authority of the logistics organization, also attaches great importance to the development of environmental logistics, and makes certain specific standard of environmental logistics in each process. To strengthen the management of environmental logistics from the angle of the government, meanwhile, promote enterprise's creative thinking in the implementation of environmental logistics, actively develop new technology, such as traffic planning, active development and test of green packaging materials, etc.

III. CONCEPT OF ENVIRONMENTAL LOGISTICS

A. *Concept of Environmental logistics*

Environmental logistics means, in the process of logistics activities, reducing the damage to the environment as much as possible and protecting the environment as far as possible at the same time, making the most use of logistics resources. It refers to the implementation of green logistics in the whole logistics activities. Only from the viewpoint of the operation, it includes the whole process of transport, packaging and processing, etc. From the viewpoint of the whole management process, it mainly improves the current environment system, reduces the waste of resources, and changes the whole logistics system. Both forward greening and backward greening is needed. The development of environmental logistics is to make a whole, balanced and sustainable development society and achieve harmonization and integration of economy, society and environment.

B. *The development of environmental logistics in China*

Environmental logistics is still in its infancy in our country. The enterprise still adopts its traditional mode of logistics development, focuses on product and cost, and completely ignores the impact on resources and environment. Green concept is not reflected in the whole production process. Consumers have no higher pursuit of green consumption; also do not have a strong sense of green environmental protection and strong social responsibility. Besides, our existing green logistics technology and professional requirements have certain gaps.

Since 2010, the whole logistics industry in China has a big trend, in which logistics and production, trade, finance and environment are more and more closely linked. Strengthening the cooperation of all aspects, logistics enterprises with innovative ideas see an opportunity.

Among them, the green logistics related link is combined with the environment, which is a new direction in the development of logistics and can improve logistics enterprise's profits. It is mainly conducted from promoting the mode of transportation of energy conservation and environmental protection and focusing on resource conservation and reuse, such as encouraging the application of recycled material, these two aspects.

IV. BARRIERS OF THE ENVIRONMENTAL LOGISTICS AND MANAGEMENT MEASURES

A. *The main barriers of influencing environmental logistics development*

1) *Understanding barrier*

All the people have not form a corresponding green logistics idea; government haven't paid enough attention to; the enterprise only care about the vested interests, and neglected the overall damage to the environment and influence.

2) *Institutional policy barrier*

Decentralized management of traditional logistics industry in our country, leads to ineffective communication between logistics departments, all kinds of separated contacts, limitation to the reasonable layout of logistics system arrangement, retard to the development of logistics service process, and serious waste of resources. Now China should introduce the corresponding laws and regulations to standardize the whole logistics market, and accelerate the process of its development.

3) *Infrastructure barriers*

In recent years, although our country has strengthened the construction of logistics infrastructure, on the whole, the degree of the development of the logistics industry in developed countries is unattainable to us. Our development mode runs in the opposite direction with the environmental logistics. It mainly displays in: first, China's transportation is not developed enough, per ten thousand square kilometers and mileage is deficient, US was 6869.3 km/sq km and 253.59 km/ten thousand, Germany was 14680.4 and 65.94, and 1344.48 and 10.43 in China seemed to be very small. Second, transport hub able to join any transportation mode is very deficient, logistics transit and other supporting facilities are scarce, which have severely restricted the distribution efficiency. Third, Without rationalizing layout, making the corresponding facilities can't play to the extreme

4) *Technical barriers*

No advanced logistics information management system in our country, logistics technology development is relatively lagging, so it is difficult to make the logistics distribution process directly reflected in the information level, making the distribution efficiency and service quality so weak. No unified various standards in the process of logistics, especially in the packaging, transportation, loading and unloading circulation, such as lack of unified standard, which lead to rising logistics costs, waste of resources, unfavorable to participate in international competition.

5) *Talent barriers*

With the positive development of environmental logistics nowadays, the defects of logistics talent shortage are completely revealed. The development of green logistics in China needs a large number of professional talents, so logistics professionals has been listed as one of the shortage of 12 class talented person in our country. At present, overall quality of the existing logistics personnel is not high, high-quality interdisciplinary talent

management; backward logistics degree education certification and lagging training work; weak logistics teachers resources, backward education technology and lack of understanding of knowledge, which seriously limit the rapid development of green logistics

B. Environmental logistics management measures

1) Green transportation management

a) To carry out Joint distribution: Joint distribution refers to delivery the goods jointly by several suppliers. A few small and medium-sized distribution centers unite together; each center will do their duty to deliver the goods at the appointed place. It mainly refers to a region of the use of the vehicle with fewer number of items and it is difficult to use high distribution rate of vehicles, and other conditions. Joint distribution has two types, one is the owner as the main body of the joint distribution, the other is a logistics enterprise as the main body of the joint distribution. From the owner's point of view, the joint distribution can improve the efficiency of logistics. Such as small and medium-sized wholesale, it is difficult to meet the requirements of different suppliers. But if using the joint distribution, fast and good. From the perspective of logistics enterprises, especially some small logistics enterprises, due to various constraints, a single distribution will be limited by rationalization aspects. If you adopt cooperation of several enterprises and joint distribution, it can solve many problems. Therefore, using this way of distribution can not only improve efficiency, but also can improve the economic benefit. At the same time, this can alleviate traffic and protect social environment.

b) Adopt combined transportation: Combined transportation refers to absorb the merits of a variety of modes of transportation, put them together, implement a way of goods transportation called polycyclic step in series. It mainly takes the container shipping, which could reduce the time and facilitate transportation. Therefore, making all kinds of tools adopts fixed indicators. As every link needs to package using it, this can reduce the cost. Its advantage also displays in: it takes the advantages of each mode of transportation, which can make the delivery efficiency achieve the highest; On the other hand, from the logistics channels, it can effectively solve the separation of commodity production and marketing due to the natural environment, social environment and market environment difference, and promote the two parts bind up with each other.

c) Develop the Third party logistics: Third party logistics is a new way of logistics service provided by the Third party logistics enterprise. Development of the third party logistics is to provide professional logistics service by a third party agencies, who have professional consideration, make the distribution and transportation more professional and reduce a lot of problems. When the enterprise's own logistics vehicles are all occupied, the advent of third party logistics enterprise reduces the distribution vehicles, which will release the pressure of the environment

2) Green packaging management

Green packaging refers to adopting low-pollution and low-consumption packing. In the process of circulation, measures should be taken to achieve the rationalization and modernization of packing:

a) *packaging standardization* : unified size and specifications. After confirming specification, package in accordance with the specifications.

b) *packaging mechanization:* this can increase the speed of operation link, beneficial to reduce costs and protect the cargo body.

c) *packing use and its processing*: repeated use of reasonable package; effectively deal with waste packaging and convert into other energy sources.

d) *innovation packaging*: using new technology achieves multiple use of new packaging

3) The green distribution processing

Distribution processing is the general term of simple operation that the goods need processing according to various links from the place of production to where it's used. It has a strong productivity, and the most helpful field of environmental protection. Mainly two aspects noted in implementing green processing: one is the centralized processing, to improve the efficiency of resource utilization and reduce environmental pollution. Secondly, processing scraps can reduce consumer's respective processing waste pollution

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4) Waste management

From the point of view of environmental protection, the future will certainly produce a lot of garbage in the process of production, consumption. Although great progress has been made in the processing and disposal of waste , in general, a large number of waste still has a serious negative social influence, resulting in a waste management difficulties, and may make energy resources consumption speed up and lead to serious destruction of the social environment. Logistics activities of the 21st century, therefore, must strengthen the resource utilization efficiency and improve the natural environment.

5) Green unloading management

The transport and each link of logistics facilities for transport of goods is the unloading of logistics. Implementing green loading and unloading, in order to avoid goods damage to the body, therefore, in order to avoid waste of resources caused by environmental pollution and enterprise pollution caused by improper handling in the process of loading and unloading. In addition, green loading and unloading require the company to improve the unloading efficiency, strengthen the flexibility of using automated processing, and ensure the safety and smooth of the process.

6) Participate in the authentication

Actively apply for ISO14000 standard certification. ISO14000 is focused on the organization's activities, the influence of products and services to the environment, and has requirements in strict accordance with the environmental protection standard from design to the regeneration process. In view of implementing green standards all over the world, competing against each other to form a green barriers, our country's logistics operators

should actively create conditions to apply for ISO14000 environmental management system standard certification, with international standards, and more strict requirements of their own construction and development of logistics, make our country's logistics can fight with other countries in the world. In China, the first third party logistics enterprise implementing ISO14000 environmental management system standard certification is the Guangzhou Xinbang logistics Co., LTD. It is one of the logistics enterprises with 4-a level in our country, and has been advocating green logistics, which definitely will have a significant effect

V. CONCLUSION

Now environmental logistics is going into full swing, and the development of the logistics industry got the attention from all walks of life. In the environment of the world today, low-carbon economy is particularly important. China is a big country in the world; its economic development has received worldwide attention. There is still a big gap between China and the advanced countries in the world. The development of low-carbon economy and environmental logistics is very outstanding beyond seas. Therefore, in such an environment, China is also trying to find its own development path, and got a leap-forward development whether from policy or from the quality of employees. In this thesis, I mainly make a comprehensive analysis on the development process of low-carbon economy and environmental logistics, which inevitably there will be some deviations. However, according to the comparison on the whole, under the background of low-carbon economy, the environmental logistics management in our country is not doing very good, but there will be a great development in future.

REFERENCES

[1] He Jin. The problems and countermeasure study of developing green distribution [J]. Beijing: Environmental Science& Technology, 2006.54-59

[2] Chen Fang. Environmental logistics management study under low-carbon economy [J].Beijing: School of Bafang logistics, Fuzhou University 2007.54-58

[3] Fang Fang. Development path of environmental logistics [J].Beijing: Science &Technology Economy market, 2009.-55-57

[4] Gao Fenglian. Status and countermeasures of environmental logistics in circular economy [J], Beijing: China Business and Market, 2008.208-212

[5] Chen Siyun, The developing trend and countermeasures of Yantian port logistics[OB/OL]

[6] Xie Sixin, Lv Jin. Environmental logistics; Strategic choice of logistics enterprise [J]. Beijing: Modern logistics, 2009(8):55-57

[7] Ding Dongsheng. Present situation and prospect analysis of green logistics in China [J]. Beijing: Market Modernization, 2009(4.): 143-144

[8] Gao Qunqin, Lu Kejiu, Chen Anyu. Present situation and countermeasure research of green logistics in China [J]. Beijing: The study of logistics and purchasing, 2009(10):22-25