

# Exploring innovative strategies for green logistics management in the context of low-carbon economy

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**Abstract:** *Low carbon economy is a requirement of the times proposed by society in the process of development. In order to comply with the development concept of low carbon economy, research on green logistics management models needs to be given attention. By analyzing the background of low-carbon economy and the current situation of logistics management, the necessity of green logistics management in the context of low-carbon economy is deeply explored, and new ideas for innovative strategies of green logistics management in the context of low carbon economy are obtained. Through in-depth analysis of the strategies of green logistics management, effective innovation paths for green logistics management models are obtained, providing reference for achieving green logistics management in enterprises. It provides important guarantees for the sustainable development of a low-carbon economy and society.*

**Keywords:** *Low carbon economy; Integration; Energy conservation and emission reduction; Modernization*

## 1. Introduction

With the development of social economy, people pay more and more attention to the survival concept of harmonious coexistence between man and nature. In order to realize the sustainable development of human society, the development concept of "low-carbon economy" has been put forward in the new era. However, with the development of social economy, in recent years, the rapid rise of various industries has led to a surge in industry projects such as express delivery and logistics, making people realize that logistics management is a huge historical project. It is found that the realization of green logistics management can greatly reduce pollution emissions, which is in line with the historical requirements of "low carbon economy". However, at present, the green logistics management system is not perfect enough, in the social background of "low-carbon economy", the implementation method of green logistics management needs to be further developed and innovated, and the innovation strategy of green logistics management needs to be discussed to get a more effective green logistics management method.

### (1). Low-carbon economic background and logistics management status

The "low carbon economy" refers to an economic development model that, under the strategic requirements of sustainable development, reduces the consumption of energy such as oil and coal[1]. Through various means such as industrial transformation, institutional innovation, and technological innovation, it can reduce greenhouse gas emissions such as carbon dioxide, and play a role in protecting the ecological environment. With the development of society and the progress of the times, ecological environment protection is urgent. In the indispensable industry field of people's lives, it is crucial to implement a more green management model, which is an effective path to develop a low-carbon economy and society.

Logistics management refers to the whole process of logistics management, which covers the whole process from enterprise management to logistics management process. The development of logistics management has risen rapidly in a few years, and the development of the logistics industry has been forced to grow, resulting in the lack of effective reference goals when the logistics management model is implemented in the industry, and it can only be slowly explored in step by step management practice to seek a more scientific and reasonable logistics management mechanism. In today's logistics management, there are still problems such as lack of innovation, serious disconnection of various links, and untimely introduction of technology. It is also necessary to further study a more green and

reasonable logistics management mechanism in the future development.

## **2. The necessity of green logistics management under the background of low-carbon economy**

The green logistics management method is a management method that further improves and innovates on the basis of the original logistics management method, achieving the effect of "energy conservation and emission reduction" by reducing resource consumption and improving resource utilization rate[2]. The emergence of green logistics management mode fully responds to the national call for energy conservation and emission reduction, and is in line with the environmental protection concept proposed by the new era of social economy. Green logistics management, as a new industrial model that extends the development of low-carbon ecological environment, requires the implementation of ecological and environmental protection concepts during the logistics management work, supporting relevant national preferential policies, and promoting the development of green logistics enterprises on the basis of a series of preferential policies.

Green logistics management can effectively control the impact of the logistics industry on the natural ecological composition, greatly reduce the resource loss of industry development, truly realize the important goal of harmonious development of man and nature, and ensure the effective development of green logistics management mode. Green logistics management can start from the ecological environment level, systematically analyze the impact of logistics management on ecology, promote the continuous update of logistics management system, the emergence of new green logistics management system, and achieve the development goal of "environmental symbiosis". In the process of its application, logistics activities will cause a variety of negative impacts on the environment. The advantage of green logistics management is that it can control this impact and support the development of logistics industry, so as to achieve the goal of green development.

## **3. Innovative strategies of green logistics management under the background of low-carbon economy**

### ***3.1 Cultivate enterprise green logistics management awareness***

The low-carbon economic environment has put forward more development requirements for various industries, including the need to innovate green logistics management models. To achieve this goal, enterprises can cultivate green logistics management awareness methods to make their teams and employees aware of the role of green logistics management and apply it to actual logistics management.

With the development and progress of science and technology, and the continuous development and optimization of network platforms, more and more enterprises no longer use a single physical store sales method, but a combination of physical stores and e-commerce, which simultaneously launches online and offline sales, so that the workload of the logistics industry greatly increased. Enterprises need to strengthen their awareness of green logistics management, cooperate with the development policy of low-carbon economy, and increase the publicity of enterprises' green logistics management awareness, which is an important route for social development in the new era.

In the context of a low-carbon economy, to cultivate the awareness of green logistics management in enterprises, it is necessary to strengthen the promotion and education of green management concepts in logistics enterprises, deeply integrate green management concepts into the awareness of enterprise employees, and promote green logistics management concepts in logistics enterprises. To achieve this goal, enterprises can cultivate from multiple aspects. In the cultivation of the enterprise's green logistics management consciousness, the internal management group of the enterprise can be allocated, each group is equipped with special green logistics management personnel, to achieve the effect of "one pass more", and strengthen the green logistics management at all levels of the enterprise. Enterprises should prioritize this policy and enhance the system support while providing regular training to employees regarding the significance of green logistics management. This will ensure that employees thoroughly comprehend the importance of developing green logistics management and simultaneously enhance their own logistics management practices. By obtaining active cooperation from employees, enterprises can elevate the overall significance of logistics practitioners in promoting the industry's sustainable development.

### ***3.2 Development and introduction of green logistics management technology***

In the context of a low-carbon economy, if enterprises want to achieve long-term stable development, they cannot be limited to the current logistics management model. The management model of enterprises should keep up with the times and develop and introduce green logistics management technologies.

Science and technology are the primary productive forces, and green logistics management requires the application of advanced science and technology to achieve. In order for enterprises to achieve long-term development in the current era, they must incorporate advanced green logistics management technology into their development[3]. On the basis of ensuring the quality of logistics management, strive to improve the efficiency of logistics management as much as possible and reduce waste of resources. Studying green logistics management technology can not only research and develop new technologies from its own perspective, but also introduce existing advanced green logistics management technologies to achieve the fastest development of green logistics management technology and meet the background requirements of a low-carbon economic environment.

Starting from the enterprise itself, improving on the basis of the original logistics management technology, or innovating and developing the management technology of new logistics links is one of the ways for the development of green logistics management technology. First of all, we should understand what is the green logistics management technology and how to realize the green logistics management technology; Secondly, strengthen the importance of green logistics management technology; Finally, the research and optimization of green logistics management technology are thoroughly implemented. Enterprises can optimize the multi-links of logistics management technology to achieve green logistics management, for example, in the loading and unloading link to ensure the integrity of packaging, to achieve the development and innovation of intelligent robotic handling technology, can greatly reduce the waste of manpower and packaging, which greatly reduces the waste of resources.

Starting from the introduction of advanced green logistics management technology, existing green logistics management technology can be applied to the logistics management of enterprises. However, the technology introduced from outside the enterprise may contradict the corporate culture and management philosophy, which requires timely adjustment of enterprise logistics management. Fully integrate the introduced green logistics management technology with the daily economic activities of the enterprise, such as current logistics communication technology, identification technology, et al., to achieve the smooth introduction of green logistics management technology [4], and fully address the needs of a low-carbon economic environment.

### ***3.3 Create a scientific and reasonable green logistics management mechanism***

Under the background of low-carbon economic environment, the innovation of green logistics management technology can provide new ideas for the development of green logistics management mode by creating a scientific and reasonable green logistics management mechanism.

As a new product of social development, green logistics management creates scientific and reasonable green logistics management mechanisms and methods based on improving its own logistics management system. The creation method of a scientific and reasonable green logistics management mechanism includes many aspects. Nowadays, logistics management mechanisms are mostly based on artificial methods. In green logistics management mechanisms, the concepts of intelligence and electronics can be deeply explored, and electronic technology management mechanisms can be utilized to achieve the strictest and most effective management of the mechanism creation process. To create a scientific and reasonable green logistics management mechanism, it is necessary to establish a more professional, systematic, and reliable management system to ensure the effective implementation and efficient management of the mechanism[5].

In terms of green environmental protection, it is imperative to enhance the modern logistics management mechanism and offer new directions and guidelines for the advancement of green logistics management. This involves integrating the logistics management concepts of enterprises with intelligent science and technology, leveraging the robust features of electronic algorithms to enforce the mechanism effectively. Establishing a comprehensive green logistics system is essential to explicitly outline the eco-friendly development goals of the logistics industry at a systemic level. This will ensure that logistics management adheres to green requirements and upholds the quality of logistics services.

### 3.4 Integrated management of multi-link processes

In the context of a low-carbon economic environment, in order to achieve the creation and optimization of green logistics management models, effective exploration of the creation of green logistics management models can be achieved through the integration of multiple processes in the logistics management process, providing new ideas for the creation of green logistics management models.

Logistics enterprises in the process of development will have a variety of workflow and links, the realization of multi-link process integration management, in the process of enterprise logistics management, is a continuous, multi-department cooperation work, at the same time, outside the enterprise, also needs the cooperation between companies. In the management mode of multi-link process integration, including the packaging link of goods, the transportation link of goods, etc., in order to achieve the green management of logistics, it is necessary to control and manage the entire industrial chain and seek the long-term development of enterprises. Green logistics management realizes multi-link process integration management mode, which plays a driving role in the sustainable development of enterprises.

In the process of green logistics management, starting from every link and process, achieving integrated management can minimize resource waste, maximize resource utilization value, implement energy-saving and emission reduction requirements in the logistics management process, actively cooperate with the era background requirements of low-carbon economic environment, and achieve the goal of sustainable development. In the context of a low-carbon economic environment, achieving integrated management of multiple processes is an effective path to innovate green logistics management models.

## 4. Conclusion

Low-carbon economic environment is an important development route proposed in the development process of The Times. In the context of low-carbon economic environment, the author pays attention to the possible implementation path of "low-carbon", studies the green management of logistics, finds out the innovation strategy of green management mode is discussed, and finds out the effective innovation idea of green logistics management mode. By exploring the innovation strategy of green logistics management, this paper starts from the background of low-carbon economy and the status quo of logistics management, analyzes the necessity of green logistics management under the background of low-carbon economy, and obtains the effective innovation strategy of green logistics management under the background of low-carbon economy. Studies have demonstrated that fostering awareness of green logistics management within enterprises, along with the adoption and implementation of green logistics management technologies, the establishment of a scientifically sound mechanism, and the integration of various processes, can effectively generate innovative approaches to green logistics management models. This approach aligns with the low-carbon economy's current landscape and contributes towards achieving sustainable development in the socio-economic sphere.

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