

# Research on the Dynamic Mechanism of Green Supply Chain Management in Chinese Manufacturing Enterprises

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**Abstract:** China's traditional manufacturing enterprises have adopted extensive production models, consuming a large amount of natural resources and causing environmental pollution. With the increasingly fierce market competition, the government has increased the environment and emission standards, and consumers have increased demand for green products. Factors promote the implementation of green supply chain management in China's manufacturing enterprises. This paper studies the dynamic mechanism of my country's manufacturing enterprises implementing green supply chain. summarizing the dynamic mechanism into four factors: environmental protection regulations, supplier support, environmental protection costs, technology and manpower. Finally, it proposes countermeasures and suggestions to encourage my country's manufacturing enterprises to implement green supply chain management.

**Keywords:** Manufacturing industry; Green supply chain; Dynamic mechanism

## 1. Introduction

Since the reform and opening up, China's overall economy has made rapid progress, and China's manufacturing industry has made outstanding contributions. However, this is based on huge resource consumption and intensive labor force. While achieving economic development, it consumes and wastes a large number of natural resources, and has an indelible impact on the natural environment. According to the survey report, the emission of waste gas and waste water has been on the rise from 2015 to 2019 in China, which has disturbed the living order of residents and affected the sustainable development of China. At the same time, as the pillar industry of China, traditional manufacturing enterprises are facing great challenges in the increasingly competitive international market. Therefore, our government has issued relevant laws and regulations, policies and systems to strictly regulate the business activities of enterprises. At the same time, consumers gradually improve the quality and requirements of products, and more and more tend to use environmental protection products. So this paper studies the dynamic mechanism of green supply chain in manufacturing enterprises, analyzes the policy, market competition, consumer demand and corporate social responsibility, so as to stimulate and promote the development of green supply chain in China, and finally achieve economic cycle and sustainable development.

## 2. Green Supply Chain Structure Theory

Green supply chain is a closed-loop system, mainly including green procurement, green production, green packaging, green marketing, green logistics, green consumption, green recycling and other links. Compared with the traditional supply chain, the green supply chain advocates the concept of "green environmental protection", relying on advanced science and technology, cutting-edge knowledge, efficient and low-cost to plan and control the logistics, information flow and capital flow of the chain and it will eventually realize the high unification of economic, social and environmental benefits.

## 3. The Current Situation of Green Supply Chain in China's

### 3.1. Current situation of environmental pollution in manufacturing industry

Although China's manufacturing industry contributes to China's GDP and solves the employment problem, but it's manufacturing industry still emits a lot of pollutants and consumes a lot of resources. According to China's 2018 Industry Research Report, in the current development process, China's manufacturing industry consumes a huge amount of energy, accounting for 65% of the country's disposable energy consumption, which is two to three times higher than the international standard. According to the China Statistical Yearbook 2018, the total energy consumption of China's manufacturing industry accounted for 58.8% of the total energy consumption in 2018, reaching 2451 million tons, 395000 tons and 900 tons, and exhaust emissions of 172.567 billion cubic me-

ters, accounting for 65.9% of the total. According to the above data, the economic development of China's manufacturing industry is accompanied by environmental pollution and destruction, and economic development and environmental development are incompatible. Therefore, China's manufacturing enterprises began to implement green supply chain management, aiming to effectively solve the problems of high energy consumption and high pollution in the manufacturing process.

### **3.2. Analysis on the current situation of green supply chain in manufacturing enterprises**

#### **3.2.1. Food manufacturing**

For manufacturing enterprises such as food processing and light industry, the measures for the administration of green food labels have also been revised by the Ministry of agriculture. Strictly regulate the production activities of food manufacturing industry, promote food manufacturing enterprises to carry out green supply chain reform from the source of supply chain, and explore the production of green food.

#### **3.2.2. Transportation and electronic industry**

The electronic industry is faced with the export restrictions of electronic double instructions in the international market. The development of machinery industry is closely related to the green production activities of equipment manufacturing industry. At the same time, it is also related to the degree of energy conservation and environmental protection of mechanical enterprises, which makes the implementation of green supply chain imperative. In the current development process, all walks of life respond to the call of the government and keep up with the trend of the times, which also makes the implementation of green supply chain in-depth implementation, in the development process is fruitful. The automobile industry is the first to bear the brunt of the green supply chain practice. The automobile manufacturing industry uses advanced technology to reduce the fuel consumption and emissions of diesel engines, solve the problem of black smoke from diesel exhaust, save fuel and reduce carbon dioxide emissions.

#### **3.2.3. Rubber and metal smelting**

In order to improve the utilization rate of resources, China's rubber, metal smelting and other resource processing industries gradually adopt new processes and new technologies to improve efficiency and protect the environment. A large number of enterprises research and develop or introduce advanced furnace combustion system, improve the recovery rate of waste metal, build recycling metal Park, and carry out centralized treatment of waste, promote the green improvement of the industry, significantly reduce energy consumption and increase environmental and economic benefits.

## **4. Research on Dynamic Mechanism of Green Supply Chain**

With the development of China's economy and the continuous practice of green supply chain, enterprises are constantly positioning the dynamic factors of green supply chain management. This paper will divide the dynamic factors of green supply chain management into the following four categories.

First, with the development of China's society, consumers' demand for green products is getting higher and higher. On the basis of pursuing interests, enterprises begin to focus on the integration of economy, environment and ecology for harmonious development. The requirements of customers for environmental protection and social coordinated development are the direct driving force for enterprises to implement green supply chain.

Second, the state has issued many corresponding environmental protection laws and regulations, such as comprehensive environmental protection basic law, environmental quality standards and pollutant emission standards, local environmental laws, etc. relevant departments also seriously and strictly enforce the law, standardize the production activities of manufacturing enterprises, and further promote manufacturing enterprises to generate the power to implement and improve the green supply chain. Third, in the market economy environment, when some manufacturing enterprises take the lead in the implementation of green supply chain and occupy market share, these enterprises will further improve their competitiveness in order to stabilize their market share, and at the same time, drive competitors to implement green supply chain management and seize market share.

Fourthly, on the basis of the national situation, the shareholders, managers and internal employees of manufacturing enterprises will spontaneously implement green supply chain management, enhance their sense of social responsibility and establish a "green" public image.

## **5. Conclusions**

In order to achieve sustainable development in the increasingly competitive market, enterprises must keep up with the development trend of the times and take competitive measures according to the relevant policies issued by the state. In the current development process, with the concept of green supply chain management gradually rooted in the hearts of the people, the state has also formulated relevant laws and regulations to supervise it. In this environment, enterprises must actively take relevant measures to meet the needs of social development. In the process of development, the enterprise always keeps close contact with the upstream and downstream enterprises in the industry, they bear all the consequences of leading an enterprise to start the whole system in the supply chain. When leaders understand the company's social

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environment, industry trends and related technologies, they should seize the opportunity to actively implement green supply chain management and win the initiative.

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