

## Original Research Article

## Research on Supply Chain Marketing Management under Enterprise Carbon Emission Reduction Strategy

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**Abstract:** Since the main purpose of carbon trading is to promote enterprises to reduce emissions, the biggest beneficiaries in the carbon trading market will be enterprises with low emissions and relatively clean technologies, as well as those with high energy carriers that save energy and reduce emissions through technological progress. At the same time, the development of the carbon market will increase the cost of carbon emission in traditional industries and promote them to continuously reduce carbon emission through technological progress and investment in energy conservation. In the view of most consumers, low carbon means high price, because enterprises will pass on the cost of carbon emission reduction to consumers, resulting in higher product prices. Wal-Mart, known for its low prices, is committed to bringing affordable products to customers, and has actively advocated a "low carbon price" after setting clear emission reduction targets so that customers do not have to choose between low carbon and price.

**Keywords:** Marketing supply chain; Corporate carbon reduction; Consumers; The marketing strategy

### INTRODUCTION

Controlling emissions through carbon pricing is now considered a relatively effective approach. The carbon market is actually a platform for companies to trade the amount of carbon they reduce in production. The construction of the national carbon emission trading market means that the policy of energy conservation and carbon reduction should be gradually transformed from the policy of administrative instruction and economic subsidy to the policy of energy conservation and carbon reduction based on market mechanism. According to the timetable, China plans to peak its carbon dioxide emissions by around 2030 and will try to peak as soon as possible. The launch of the national carbon market is another major step in China's efforts to peak carbon emissions (Shaw, K. *et al.*, 2013). According to a recent CDP supply chain report, CDP suppliers reported emissions reductions equivalent to 551m tonnes of carbon dioxide, resulting in cost savings of \$14bn. A total of 463 Chinese companies disclosed to the CDP in the 2016-17 reporting year, reporting that 8,500 tons (category 1 and category 2) of co2 emissions were reduced, saving or avoiding 123 million tons of carbon emissions. The annual cost savings for implementing the programs during the reporting year were \$647 million.

The response rate of Chinese suppliers to the 2017 CDP climate change questionnaire reached 82%, exceeding the global average of 53% and ranking second only to Japan. In terms of absolute number, the number of suppliers who actually replied to the CDP climate change questionnaire in 2017 increased by 80% compared with 2016. The high recovery rate of Chinese suppliers shows a strong driving force for supply chain disclosure of environmental information driven by the power of procurement, and also indicates that the range and depth of Chinese suppliers' participation in green purchasing and green supply chain management of multinational enterprises have increased significantly (Da-peng, C *et al.*, 2010).

### METHODS

This paper adopts case analysis method, Comparative method, Conceptual analysis. Case analysis, also known as case study method, was developed and completed by Harvard University in 1880. It was later used by Harvard business school to train senior managers and management elites in education practice, and gradually developed today's "case analysis". Harvard's "case study" started as a education technique for senior managers and business

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policy related education practices, and was later used by many companies as an important method to train their employees. By using this method to train employees, it can significantly increase their understanding of various businesses of the company, cultivate good interpersonal relations among employees, improve their ability to solve problems, and increase the cohesion of the company (Nishitani, K. *et al.*, 2016). It refers to the method of analyzing a single object in combination with the literature data to obtain the general and universal laws of things. A comparative study of two or more things is a method commonly used in almost all subjects, and law is no exception.

Comparative research has a long history, but it is generally believed that it was only in the mid-19th century that it became an independent method of law. It plays an important role in promoting the exchange of legal culture, learning and learning from other useful experiences to improve national laws and promote the development of international public and private law. Comparative research has a long history, but it is generally believed that it was only in the mid-19th century that it became an independent method of law. Since the middle of the 20th century, the method of comparative study in jurisprudence has been paid more and more attention. It plays an important role in promoting the exchange of legal culture, learning and learning from other useful experiences to improve national laws and promote the development of international public and private law. Conceptual analysis is also called term analysis, which refers to the research method to determine the connotation and extension of the concepts represented by terms. Concept is the basic unit of thought, and its connotation is the special attribute of the object reflected in the concept. Its denotation is that the concept reflects everything (Cai, W. K. *et al.*, 2011).

#### Enterprise low-carbon supply chain marketing strategy

### 1. Climate Saver and Enterprise low-carbon supply chain

Carbon target science is a global initiative that aims to help companies set accord with 2 °C decarbonization scientific carbon emissions targets, the level of and committed to promoting the setting based on carbon emission reduction targets has become normal business. Broad was the first Chinese companies to commit to setting scientific carbon targets. CEOs of the world's leading companies have jointly launched the "race to be a zero runner" charity campaign in Beijing, calling on global companies to take further measures to take concrete actions to reduce carbon emissions and waste. The "race to zero" initiative focuses on new quantifiable measures companies are planning to take in China to reduce greenhouse gas (GHG) emissions and waste in their companies and supply chains. "Be" zero "runner" is made up of Mr. Paulson's foundation and the China international economic and exchange center launched the global public welfare activities, to call for

the world's leading companies take the lead in reducing carbon emissions and waste, highlighting the enterprise practice in China "zero emissions", "zero waste" continuous exploration and efforts, together hand in hand, to encourage more enterprises "be" zero "runner". Including Alibaba group, Anheuser-Busch InBev co, Honeywell, HP, IBM, Kraft Heinz, Wal-Mart, Vanke group, China shipping 22 global companies such as liquefied petroleum gas (LPG) electric group co., LTD joined the "be" zero "runner" public welfare activities and set the targets, such as Honeywell China committed \$2022 per revenue resulting greenhouse gas emissions by 10%; Walmart has pledged to reduce emissions in its global operations by 18 per cent by 2025 and to reduce them by 1bn tones from the global value chain in collaboration with suppliers through a 1bn tone programmed. The carbon emission reduction pioneer project is a cutting-edge cooperation project between WWF (world wide fund for nature) and leading enterprises in the industry, with the goal of promoting voluntary implementation of further energy conservation and CO<sub>2</sub> emission reduction actions. This cooperation will provide a strong solution to climate change (Morris, C. *et al.*, 2014).

The targets assessed and endorsed by WWF should be more challenging than previous targets, making companies a pioneer in cutting emissions in their industries. Pioneering carbon projects do not refer to the contracting companies themselves, but to the content of the agreements concluded. The WWF does not monitor the entire implementation process. The agreement mainly includes a series of practical and quantifiable greenhouse gas emission reduction measures jointly developed by enterprises and the world-wide fund for nature (WWF). The member companies involved in the project have seen their efforts in the climate sector have a positive impact on their productivity, reputation and overall business environment. The range of actions taken by companies is truly innovative and has a positive impact that some companies did not even begin with. Pioneering carbon projects can provide financial and non-financial benefits to participating companies. According to the feedback from many companies involved in the project, the main attraction of the project is: Many business leaders have recognized that global warming is intensifying and will become the greatest environmental problem of the century (Xu, X. 2011). Other companies, whatever their attitude to climate change, have come to realize that developing corporate climate change strategies is a necessary way to maintain their competitiveness. More than half of the enterprises in this survey are private enterprises, accounting for 57.38% of the total. In addition, the proportion of foreign enterprises, state-owned enterprises and joint ventures is 25.41%, 9.84% and 7.38% respectively. As for enterprise size, enterprises with more than 500 employees and enterprises with a size of more than 100 million yuan all account for more than 50%. Therefore, the results of

this survey are mainly for large enterprises, as shown in

Table-1 below:

**Table-1. The scale of low-carbon supply chain marketing enterprises under investigation**

Number of enterprises					
enterprise scale	<100	100-200	200-500	>500	Total
<5 million	12.3%	0.82%	0.82%	0%	13.93%
5-10 million	3.28%	3.28%	1.64%	0.82%	9.02%
10-20 million	0.82%	0.82%	4.10%	0.82%	6.56%
20-50 million	1.64%	2.46%	4.10%	1.64%	9.84%
50-100 million	0.82%	1.64%	4.92%	3.28%	10.66%
>100 million	0%	1.64%	4.10%	44.26%	50.00%
Total	18.85%	10.66%	19.67%	50.82%	100.00%

Data source: author collate

**2. Low-carbon supply chain management tool**

When implementing carbon management in the supply chain, brand enterprises can make more use of some public tools, such as using the pollution information database to query the pollution status of their suppliers, and using the carbon emission factor database to calculate their own and supply chain carbon emissions. This article mainly around the brand enterprise how to promote supply chain carbon management, brand enterprise own bear the brunt of the cuts, and for supplier firms are more need to carry out the carbon management specific work, including carbon management related training to actively participate in the customer, to carry out the enterprise carbon scrutiny, matching with the customer set up carbon management system, make scientific carbon targets, the implementation of carbon reduction plan and participate in carbon trading, etc. Internationally, green supply chain management has long been an inevitable trend. Countries such as the us and Europe started a "green revolution" in the 1990s as leading global companies pushed suppliers to meet their environmental responsibilities. Many multinationals, such as apple, Wal-Mart, Procter & gamble, nestle and uncler, are introducing new initiatives that emphasize green management of supply chains.

The demand of consumers for green goods and green consumption is showing a growing trend. It is the new target and new direction of brand enterprises to cater to consumers' demands and actively and fully communicate with consumers on environmental protection and green issues. There are many ways to communicate with consumers, and the efforts made to make consumers understand the relevant traceability data of products in terms of green and low-carbon through labels or qr code scanning on products will undoubtedly achieve unexpected good results. The competition among brand enterprises is all-around (Tang. J., Ji, S., 2014). Besides the cost performance of products, the environmental performance of products themselves can also highlight the efforts and contributions of enterprises in social responsibility and sustainable development. It is easier to win higher level competition in the market and help enterprises become

leading brands in the whole industry and even the society.

**Case Study on Marketing Management of Low-Carbon Supply Chain**

Tesco believes the retail sector can play a strong role in tackling climate change, which will also create new opportunities, jobs and businesses. Determined to play its part, Tesco has ambitious plans to reduce carbon emissions in every major area of its business, from the supply chain of products and services to the carbon effects of construction and transportation. By setting ambitious goals and developing new partnerships to reduce carbon emissions in its supply chain, Tesco has played a leading role in driving global suppliers, customers and competitors to focus on climate change. Tesco's goals represent three ways to reduce carbon emissions: The first is the direct carbon emissions from store heating, cooling, lighting and shipping (Li, J. *et al.*, 2015). Second, the emission caused by the products required by the supplier for production and processing of customers; The third is the emissions generated when customers consume the products they buy. Tesco's goal:

- by 2020, carbon emissions per square foot in stores and distribution centers will halve from 2006.
- by 2020, the carbon emissions per shipment will be 25% lower than that of 2011.
- by 2020, the carbon emissions of the product supply chain will be 30% lower than that of 2008.
- help customers find ways to halve their carbon footprint by 2020.

Tesco believes that carbon reduction can only be achieved through genuine open source collaboration. Tesco is ready to do its part and is encouraging suppliers to follow suit. Together with its partners, Tesco has set up a cooperative buyer's club for suppliers to help them invest in energy-efficient lighting and installation by offering substantial discounts and advice. The buyer's club is now open to more than 700 business members of the Tesco knowledge center. The Tesco

knowledge center is a global online community for Tesco suppliers to encourage them to share information, experience and best practices on carbon reduction (Zu, Y. *et al.*, 2017). The scheme takes advantage of the collective purchasing power of knowledge center suppliers to negotiate the discount of energy-saving lighting equipment. This could save up to 25 per cent on equipment costs and 80 per cent on potential energy costs.

Wal-Mart has pledged to reduce carbon emissions from its entire supply chain by 20 million tons of carbon dioxide by 2015. One of the goals of the CO<sub>2</sub> reduction program that has begun is to publish a guide document detailing how those reductions are calculated, to be reported to the Environmental Defense Fund (EDF). Wal-Mart claims that focusing on production and supply chain opportunities can benefit both business and the environment, and that advancing its supply chain strategy by identifying opportunities to reduce maximum pollution is a priority. Quantifying and evaluating emissions reductions requires the project team to create a set of guidelines for calculating emissions reductions. ClearCarbon Consulting, a carbon reduction team, works with EDF, price water house coopers, carbon disclosure (CDP) and Wal-Mart. Wal-Mart will use the framework to calculate its carbon reduction subprojects as follows (Jian, L. I. *et al.*, 2015). Although the document is an internal tool designed for the team, EDF will release it to provide transparency about Walmart's emissions reduction programmed. Transparency is a big part of the sustainable retail strategy. EDF works with Wal-Mart buyers, commodity managers, company leaders and retail business units to identify projects that can achieve significant carbon reductions. EDF said the team prioritized products with the largest and most important GHG emissions over the entire life cycle and those with the largest volumes. To reduce carbon emissions at source, Wal-Mart has launched a green supply chain program that requires all suppliers to be certified by local regulations and social environmental standards, including reducing unnecessary packaging, reducing water and energy consumption, and improving logistics and transportation efficiency. At the same time, local production can be purchased directly from local farmers and farmers to reduce intermediate transport links and reduce carbon emissions. It has pledged to work with 200 leading suppliers to improve energy efficiency by 20 per cent by 2012 and to assist suppliers' factories to meet 100% environmental standards.

## CONCLUSION

Strengthening carbon management is not only a social responsibility of enterprises, but also an important indicator of their future competitiveness. When companies such as Wal-Mart and Tesco disclosed their efforts to reduce carbon emissions, more companies in China have begun to focus on brand competitiveness and huge opportunities in the carbon

market. The first step toward effective carbon management for companies is to focus on reducing their direct emissions, including improving energy efficiency, using clean energy, and addressing climate change-related businesses. Without measurement, it cannot be managed. Carbon footprint measurement can quantify the carbon emissions of enterprises, help enterprises to improve energy efficiency, and provide opportunities for carbon reduction, saving the cost of carbon reduction (Liu, M. *et al.*, 2017) Carbon footprint refers to the total amount of greenhouse gases, including carbon dioxide, emitted by an activity or product. A more fundamental solution is also needed, such as managing the carbon footprint of products across the supply chain. Carbon footprint analysis should be based on all steps in the supply chain (production, use and disposal or recovery), which is often called carbon life cycle analysis. A carbon life-cycle analysis of individual products along each step of the supply chain is likely to identify significant opportunities to reduce emissions and large economic benefits. Supply chain carbon management is to measure the carbon footprint of each step of the product's carbon life cycle, take measures to reduce carbon emissions and green the supply chain.

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