

# What Can Consumer Goods Companies in China do to Help Achieve Carbon Peak?

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**Abstract.** The consumer goods industry is closely related to people's lives and affects everyone's food, clothing, housing, and transportation in almost every way. As consumers' consumption levels rise, they demand higher quality and are more concerned about the impact of their consumption behavior. In the context of China's rapidly awakening consumer consciousness, carbon neutrality is not just a public service project but a must for consumer goods companies to fulfill their social responsibility, meet consumer demand for sustainable products, optimize their business model, and meet the needs of investors. Globally, leading international consumer goods companies are developing carbon neutrality in full swing and have been widely recognized by consumers, investors, and other sectors of society. However, most of the domestic companies have started late and are still at the stage of asking questions. By analyzing the development experience of leading consumer goods giants, the author has proposed the discussion of strategies for consumer goods companies in China to help achieve a Carbon Peak by using case studies, analogy analysis, and benchmarking to provide guidance for consumer goods companies on their carbon neutral journey.

**Keywords:** Consumer Goods, Consumers, China.

## 1. Introduction

### 1.1 Carbon Neutrality

Carbon neutrality means that the total amount of carbon dioxide or greenhouse gas emissions (produced directly or indirectly by a country, enterprise, product, activity, or individual within a certain period) can be offset by planting trees, energy saving, and emission reduction to achieve a positive or negative offset and achieve relative "zero emissions" (Zhao, Xin, et al., 2019).

### 1.2 ESG Rating System

ESG Rating Systems, also known as ESG Ratings, are created by business and non-profit organizations to assess how a company's commitment, performance, business model, and structure are aligned with sustainability goals (Escrig-Olmedo et al., 2010). In the first place, investment firms use them to screen or evaluate companies in their various funds and portfolios. Job seekers, clients, and others can also use these ratings when evaluating business relationships. The rated companies themselves can better understand their strengths, weaknesses, risks, and opportunities.

### 1.3 ESG Rating System Workflow

The workflow of ESG rating consists of three main parts:

Data collection and information summarization;

Indicator setting, scoring, and rating and forming rating results;

Indexing the rating results to form products that serve as investments.

A rating agency may carry out the whole process above or may be involved in only some of them (Xu, 2022). Because ESG has not yet had a globally unified definition and disclosure standard, each rating system tends to form an evaluation system based on the ESG disclosure standards of the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), etc., selecting different indicators and constructing methodologies based on industry classifications such as MSCI.

The ESG evaluation system mentioned in this paper is based on three core aspects: Environment, Social, and Governance, and is subdivided into three to four levels of specific indicators for scoring.

## **2. Research Methods**

### **2.1 Case Study**

A case study is an empirical inquiry that investigates a contemporary phenomenon in its real-life context (Stoecker, 1991). As the boundaries between the phenomenon and context are not broadly apparent, investigators develop the research with sequences of multiple sources of evidence. In other words, a case study is a particular way of observing any natural phenomenon in a data set (Stoecker, 1991). Unlike other methods, a case study has to deal with uncertain real-life contexts that may develop out of control. In addition, compared to the Quantitative Analysis, which develops the research at the macro level based on the frequency of the occurrence of the phenomena which is observed, the case study observes the data and develops at the micro level. In this research, the writer uses consumer goods companies in different countries as case studies materials to do an analogous Analysis.

### **2.2 Analogous Analysis**

Analogous Analysis is commonly used to predict the market trends of similar products abroad. This projection method predicts the product market with foreign similarities and conditions to analyze and predict the renewal time of similar products in China. In this research, the author uses the adjustments and changes made by foreign and domestic consumer goods companies in carbon-neutral businesses to predict and suggest the following adjustments and changes that other companies can make.

### **2.3 Benchmarking**

Benchmarking is a continuous process of comparing and measuring the performance, quality, and after-sales service of products against the strongest competitors or companies that have become leaders in the industry and taking improvement measures (Yasin, Mahmoud, 2002).

The horizontal comparison method includes two crucial aspects: on the one hand, we make plans to constantly search for and set up benchmarks of domestic and international advanced levels and find out the gaps in our products through comparison and comprehensive thinking. On the other hand, the writer suggested that companies should constantly take improvement measures in design, process and quality management, take the strengths of others and make up for their weaknesses, and constantly improve the technology and quality level of our products to surpass all competitors and reach and maintain the advanced world level.

## **3. Company Action Plans**

International consumer goods leaders are already at the forefront of carbon neutrality, while most domestic companies are at the stage of asking questions. Looking around the world, leading international consumer goods companies (such as Nestle and Unilever) have become carbon-neutral pioneers, not only receiving widespread praise but also growing their own businesses rapidly, and their performance in the capital market is also eye-catching.

### **3.1 Case study: Nestlé**

Nestlé uses carbon neutrality as an opportunity to transform its products and operations to achieve double success in terms of reputation and business.

Nestle's excellent performance in ESG has been widely acclaimed by the community and has enhanced brand power. Nestle China's case of "Promoting Sustainable Packaging and Creating a Waste-Free Future" was also selected as one of the 2nd UN Sustainable Development Practices (UN DESA, 2021). This shows that the UN has recognized Nestle's efforts in sustainable development. Typical examples are:

Sustainable products business growth. Taking plant-based meat as an example, Nestlé seized the opportunity of low-carbon product demand and launched new plant-based meat products in key global markets (e.g., the U.S. and China), driving high growth in the plant-based products business. Nestlé sold \$860 million worth of plant-based food in 2021 (Nestlé, 2021).

Its business operations continue to reduce costs and improve efficiency. For example, Nestlé Waters has adopted Sidel's energy-saving solutions worldwide, reducing energy consumption across its plants and saving an average of more than €1 million annually (Sidel, 2016).

Nestlé is favored by ESG capital, and its share price continues to rise due to its outstanding performance in the ESG space. As of April 2021, Nestlé shares have the highest frequency in the top 10 European fund holdings. Its outstanding performance has made Nestlé favored by most ESG funds (e.g., Kingfisher Sustainable Pan-European Fund). The addition of institutional investors has kept its share price up and outperformed the sector average.

While the leading international consumer goods companies are in full swing in the field of carbon neutrality, most domestic consumer goods companies are in the initial stage of their carbon neutrality journey. They still face basic questions and cognitive pain points such as targets, strategies, and methods.

Many companies do not know "what to target" and lack a clear understanding of carbon neutrality's definition and strategic positioning. In addition, they do not understand the areas covered by carbon neutrality, its position in the corporate strategy, and the current carbon emissions status. Thus, Companies need help to set scientific targets and timelines.

On the one hand, although some enterprises have intuitive knowledge of carbon emission reduction, environmental protection, and energy saving, they need more global thinking about carbon emission reduction measures and often adopt point-like measures instead of the overall layout. On the other hand, they lack a deep understanding of the support and guarantee system required for carbon-neutral change, such as dedicated teams, project management, assessment and incentive mechanisms, professional talents and so on. This makes them hard to deal with capacity gaps, and the road to change is not smooth.

### 3.2 Reinventing the supply chain to drive source reduction

Material waste during the manufacturing process is an essential factor influencing carbon emissions (Turner, 2015). Consumer goods companies at the core of the value chain can set sustainable, low-carbon sourcing standards and implement them while empowering partners to fill capacity gaps and optimize warehousing and distribution logistics to drive carbon reduction in the overall supply chain. The five key actions include:

**Set procurement standards.** Companies should set sustainable, specific procurement standards to adjust their procurement strategies and supply systems. For example, adjust supply systems by taking measures such as using renewable energy, localized procurement, and choosing low-carbon and environmentally friendly materials, and ensure that procurement teams implement procurement standards through training and other means.

**Systematically track and evaluate supplier performance.** Based on procurement standards, companies can collect and analyze supplier performance data, develop action plans to improve the supply chain, and systematically and openly incorporate supplier performance (including sustainable standards implementation) into the core considerations for procurement contracts and renewals.

**Establish an accountability and incentive mechanism.** Based on performance evaluation, establish accountability and incentives with clear rewards and punishments mechanisms. Incentives and penalties can use financial and non-financial instruments, such as shorter payment due dates, long-term contracts, and other non-financial measures.

**Empower long-term and mutually beneficial partners in multiple ways to enhance the "cooperation ecology"** (Gardner et al., 2008). For example, for suppliers with a strong willingness for long-term cooperation and a high potential for development, we can consider establishing

long-term relationships and providing them with various support, such as training, technology, financing, and long-term contracts, to improve performance.

**Improve warehousing and logistics operation modes** to save energy and reduce emissions (McKinnon et al., 2015). Collaborate with suppliers and partner organizations to optimize operations in areas such as warehousing centers, logistics paths, distribution modes, and energy to promote overall emission reduction in the transportation and warehousing chain. For example, adopt sustainable energy and environmentally friendly transportation means, reduce distribution routes, etc.

### 3.2.1 Case Study: Johnson & Johnson

Johnson & Johnson earns accolades for supply chain emissions reductions. On the road to carbon neutrality, Johnson & Johnson is not only focusing on optimizing its own operating model but also leading its eco-partners in driving value chain emissions reductions, with plans to include all suppliers in the Johnson & Johnson Supplier Sustainability Program by 2025. This program meets both environmental and social development requirements. As a result, by 2020, Johnson & Johnson had received an A rating from the CDP for three consecutive years and had been named a CDP Supplier Engagement Leader for the fourth time in a row in the Climate Stewardship Initiative.

## 3.3 Product Innovation

Product innovation may result in a slower increase in household energy consumption (Sorrell, 2015). The core of the business operation is the product, and user experience and demand are the driving force of product design. Driven by carbon emission reduction, companies can reinvent product power for existing products from the whole product life cycle, including materials used, process design, shape and packaging, and disposal and recycling, and even further innovate and develop new products to meet consumers' demands for functional and sustainable products. Starbucks, the world's leading retail giant, has already made fruitful attempts at product innovation.

Reducing plastic use is the most critical measure for carbon emission reduction. If the plastic output growth slows from 4% to 2%, carbon emissions from plastic products in 2050 may decline by 56%.<sup>9</sup> The biodegradable plastic industry has been multiplying in recent years. Using biodegradable plastics in consumer goods packaging can help lower carbon emissions (UCSB).

Furthermore, waste recycling is one of the most direct ways to reduce carbon emissions during manufacturing processes. The carbon emissions from the recycling process are usually much lower than those from remanufacturing and landfilling. Studies have shown that depending on the types of materials, one ton of recycled waste can reduce carbon emissions by up to 8.1 tons. Meanwhile, sorting plastics can significantly improve the efficiency of garbage recycling, which can help reduce unit carbon emissions by 50%–100%.

### 3.3.1 Case Study: Starbucks

Starbucks continues to innovate its products regarding materials, packaging, manufacturing processes, and product recycling. In terms of raw materials for coffee making, similar to Nestle's use of plant-based milk, Starbucks uses plant-based raw materials. In addition, Starbucks launches milk-free coffee with plant-based ingredient Oatly milk replaces traditional milk in the new product, reducing carbon emissions (Starbucks, 2021).

Starbucks uses eco-friendly cups in its stores worldwide. Encourage customers to use their own cups through special offers. Ceramic mugs and paper hot beverage cups (made from 10 percent recycled materials) are also available in stores for free. Meanwhile, Starbucks will adopt a more advanced production process and optimize the process to achieve a 50% reduction in water use in coffee processing by 2030 (Starbucks, 2021).

In addition, Starbucks recycles the coffee grounds produced during production to introduce biodegradable straws. They are reusing the coffee grounds after extraction, combining them with food contact PLA material to create new straws that are 90% degradable within four months (Starbucks, 2020).

In addition, some consumer goods companies, especially start-ups, are taking full advantage of consumers' demand for low-carbon products to win them over with new functional and sustainable products (e.g., bio-manufacturable, biodegradable, low-carbon recyclable, green production, etc.).

### 3.3.2 Case Study: AllBirds

Allbirds, a footwear brand established only five years ago with an emphasis on health and environmental protection, has already reached \$220 million in sales in 2019 with a total financing of over \$200 million. The secret of its success is the functional innovation of its products using new materials, such as the use of merino wool material to make the products breathable, temperature-regulating, and moisture-wicking properties. Allbirds' website shows that the carbon footprint of an average pair of sneakers is 12.5 kilograms of carbon dioxide equivalent. In comparison, the average carbon footprint of each pair of Allbirds shoes is 7.6 kilograms of carbon dioxide equivalent per pair.

Allbirds aims to make the most comfortable shoes in the world, and the company has begun to expand its industrial line into socks, clothing, and more (Ye, 2020).

## 3.4 Innovative marketing models

For consumer goods companies, marketing capabilities are particularly important in addition to superior product strength. In the wave of carbon neutrality, leading consumer goods companies should make full use of this opportunity to combine carbon neutrality with "marketing" to reshape their brands.

In the wave of carbon neutrality, leading consumer goods companies should use this opportunity to combine carbon neutrality with "marketing" to reshape their brand power and integrate carbon neutrality with "sales" to optimize their distribution network, store layout, and consumer delivery. In general, corporate marketing should focus on low-carbon product certification, low-carbon value elaboration, Promotion of low-carbon concept thematic marketing activities, and low-carbon channel transformation, that is, the "4Ps".

**Product label.** Companies should account for the carbon footprint of their products, achieve low-carbon product certification, and promote public awareness by displaying carbon labels to the public, including communicating low-carbon values with carbon-neutral markers.

**Proposition.** By conducting low-carbon value promotion and elaborating on low-carbon product value, companies can indirectly communicate the product price logic (premium) with the public, for example, by disclosing carbon emissions, publishing ESG reports, and joining environmental initiatives to demonstrate sustainability results.

**Promotion.** Combine environmental protection concepts such as carbon neutrality with marketing activities and enhance public awareness of low-carbon concepts through the disclosure of carbon emissions, sustainable development, and social responsibility reports. The company will also enhance the public's awareness of low-carbon concepts by disclosing carbon emissions, sustainability, and social responsibility reports.

**Place.** Optimize distribution systems (e.g., stores, logistics, etc.) to enable companies to transition to low-carbon operations, such as more environmentally friendly store design, clean energy, shorter logistics routes, and use of environmentally friendly vehicles.

Combining carbon neutrality with marketing strategies can help companies attract high-net-worth consumers, improve consumer stickiness, and attract and retain employees.

Attract high net worth consumers and enhance consumer stickiness. Consumers who are concerned about low carbon and have a strong sense of environmental protection are usually well-educated, high-net-worth consumers with high incomes. By combining low-carbon concepts with marketing campaigns, companies can effectively identify such consumers and enhance their interaction with the target group.

Attract and retain employees. Companies that are in tune with social trends have a strong sense of awareness and advocate low carbon and environmental protection usually have an easy time



cultivating a sense of identity and belonging among young employees and can attract and retain talent.

### 3.4.1 Case Study: 4P strategies conducted by well-known consumer goods companies

#### 3.4.1.1 Product label

In 2020, on the eve of World Earth Day, San Francisco-based innovative eco-fashion brand Allbirds announced a "carbon footprint" label for its products. Allbirds calculates each product's carbon footprint from material use to design, production, care, and even recycling. It is the first fashion brand in the world to disclose its carbon footprint (Ye, 2020).

#### 3.4.1.2 Proposition

Leading consumer goods companies such as Danone, Nestle, and Unilever have all presented their sustainability goals and plans to the public on their official websites and intend to publish annual sustainability reports to disclose carbon emissions, follow up on progress made in a timely manner, and summarize success stories and practical experiences.

#### 3.4.1.3 Promotion

Starbucks launches a free coffee campaign on Earth Day. Since 2014, Starbucks has been actively responding to Earth Day for seven consecutive years by offering free coffee to customers who bring their own cups on Earth Day, encouraging customers to develop the habit of bringing their personal cups to drink.

Danone launches the "Pulse Green Campaign for College Students" on Earth Day 2021 in Shanghai, focusing on water conservation, packaging, recycling unused items, and other green ways of living on college campuses. The campaign focuses on water conservation and packaging, recycling unused items, and other green lifestyles on university campuses. In addition, through initiatives such as the "Green Workshop" and "Green Action," Danone is empowering the green creativity and green drive of young people (Yang, 2020).

#### 3.4.1.4 Place

Starbucks has created environmentally friendly stores. The stores use fluoride-free air conditioning systems to reduce damage to the earth's atmosphere; use low-VOC paints and encourage factory processing to reduce the impact on store air quality; use LED lights and CFLs for all lighting systems to achieve 15 percent energy savings in electricity consumption.

IKEA creates green logistics. In 2018, IKEA joined hands with Suning Logistics to use new energy logistics vehicles in warehouse and distribution transport as well as in the last-mile delivery process to create green distributions for home logistics. At the same time, couriers bring back cardboard boxes to customers' homes and recycle them at courier sites.

## 3.5 Expanding ESG Investment

Carbon neutrality is a new frontier for most consumer goods companies, and there may be some gaps in the capabilities that companies need to achieve it. However, consumer goods companies can use strategic investments to fill their own capability gaps, empower upstream and downstream to drive ecosystem transformation, and also make investments in commercial placement and build environmentally innovative brands and businesses to expand their ecosystems.

Industry-specific materiality classifications identify ESG information that is value-related and predictive of a company's future financial performance (Khan et al., 2016). Disclosure of such information is associated with less stock price synchronization, i.e., greater price volatility due to company-specific information (Grewal et al., 2017).

At this point, companies have a good understanding of the five key elements of developing an action plan. After defining the carbon-neutral strategic goals and action plans, companies can consider how to ensure that the strategy requires a journey of change in three areas: technology, organization, and change management.

## **4. Digital Intelligence Empowerment**

Following the rule that only what can be measured can be managed, the greenhouse gas intensity of different products, institutions, and processes is being measured globally, expressed as their carbon footprint. The carbon footprint calculation methodology is still evolving and becoming an important tool for greenhouse gas management. The concept of carbon footprinting has penetrated and is being commercialized in all areas of life and the economy (Pandey, 2010). After carbon baselines and targets are set, carbon tracking and data analysis are necessary to continuously drive carbon neutrality targets, helping companies monitor their performance and adjust their strategies in a targeted manner. Digital tools can significantly improve the efficiency of these efforts.

### **4.1 Continuously track carbon emissions, update and report on the progress of reductions**

Carbon emissions involve all activities of a company's operation and the upstream and downstream of the industry chain. It is inefficient and inaccurate to track and calculate carbon emissions manually. Therefore, the solution of "sensor collection + digital tool tracking and aggregation + visual display and analysis" is gradually adopted. For example, Danone uses industry-leading carbon platforms (e.g., Pure Platform, Cool Farm) to track and calculate carbon emissions from its operations and upstream and downstream while following the international standard for calculating carbon emissions in the GHG accounting system (Danone, 2021).

### **4.2 Aggregate and analyze carbon emission data to guide business development and emission reduction tuning**

With the support of digital tools, carbon emission data can be refined to each link of the value chain (e.g., suppliers, packaging material suppliers, etc.), each factory, and each operation area. In addition, companies can also realize carbon emission forecasting through high-level algorithms to provide decisions basis and references for each business department (e.g., procurement, marketing, R&D, etc.).

## **5. Limitations and future research advice**

Understanding the influence of different types of platform characteristics and platform network characteristics on innovation can add depth to the study in the future. The researcher recommends similar studies in other highly regulated countries experiencing similar mobile payment development. Cross-country comparisons that look at country-specific nuances could provide more information about the impact of multiplatform ecosystems on institutional changes in the consumer goods industry and also other industries.

## **6. Conclusion**

Enterprises can play an active role in product innovation, efficiency improvement, energy consumption reduction, environmental protection, emission reduction, recycling, economic sharing, and ESG development as we approach the carbon peak. These metrics can potentially increase economies of scale, reduce costs, and improve the quality and experience of green consumption.

The research focuses on the discussion of strategies for consumer goods companies in China to help achieve a Carbon Peak by using case studies, analogy analysis, and benchmarking. The writer suggests the companies in China should reinvent the manufacturing process, innovate more environmentally friendly products and marketing models, and focus on the ESG investment to help reach Carbon Neutrality.

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