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# **The Role of Individual Lifestyle Change in Achieving Carbon Neutrality and Ways to Lead the Public to Participate in Carbon Neutrality**

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## **Abstract**

Based on the concept and connotation of carbon footprint, this study studies the role of individual lifestyle in achieving carbon neutrality, proposes feasible plans to change individual lifestyle and methods to guide the public to participate in carbon neutrality, so as to provide scientific reference for reasonable decomposition of emission reduction responsibility.

The epidemic and floods brought about by extreme climate change have seriously threatened human life and security. Reducing carbon emissions has become a pressing task for the construction of ecological civilization. Based on the fact that mankind is a community with a shared future, everyone should shoulder the responsibility of reducing emissions. At the same time, although various countries have introduced some relevant policies, but "it is difficult to change people's way of thinking", "residents lack of low-carbon awareness" and other problems still exist. Leading the public to participate in carbon neutrality is the only way to achieve carbon neutrality.

**Keywords:** Carbon emission; emission reduction; low-carbon life; public participation; individual carbon emission credit system.

## **1. The role of individual lifestyle change in achieving carbon neutrality and ways to lead the public to participate in carbon neutrality**

In 2022, the UK Met Office issued its first-ever red alert for extreme heat. Japan and other countries reported tens of thousands of heatstroke cases, Spain and Portugal reported thousands of deaths from heat stroke, and India and Pakistan were already hit by temperatures ranging from 45°C to 50°C as early as April. The world was under extreme weather. The continuous occurrence of extreme weather is caused by global warming, which is mainly caused by human activities.

According to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, the world has embarked on a dangerous path. The effects of climate change are felt all over the globe. Without significant emissions cuts, global temperatures will rise by 4 degrees Celsius above pre-industrial levels, threatening all parts of the world with rising sea levels, water shortages, ecosystem degradation and other climate impacts. There is no time to delay action.

Carbon neutrality is the solution to the global warming problem. It achieves emission reduction in various ways to offset the total amount of carbon dioxide or greenhouse gas emissions directly or indirectly produced by countries, enterprises, products, activities or individuals within a certain period of time, achieving positive and negative offset and achieving relative “zero emissions”.

The future of mankind is developing together. Everyone must assume the responsibility of reducing emissions. It has gradually become the consensus of all sectors of society to realize a low-carbon life in an all-round way. However, it is not mandatory or necessary for individuals to practice carbon neutrality, and the implementation of policies and activities related to “carbon neutrality” mostly depends on people’s personal will. Therefore, it is key to change people’s way of thinking and enhance the awareness of “low carbon”. At the same time, individual emission reduction lifestyle should be advocated to let more people participate in the efforts to achieve carbon neutrality.

Practice low-carbon concept, advocate low-carbon life, and establish personal carbon emission credit system are the direction of this paper. Firstly, carbon footprint mainly refers to the total emissions of greenhouse gases emitted by human production and consumption activities in terms of carbon dioxide emissions. Low-carbon life means to try to reduce the energy consumed during daily work and rest, so as to reduce personal carbon footprint, especially CO<sub>2</sub> emissions, so as to reduce air pollution. This is done mainly achieved by changing the details of life. In the process of practicing the concept of low-carbon life, individual awareness of emission reduction and correct ways to guide public participation are crucial. This requires feasible low-carbon life practices to provide reference, and the establishment of a personal carbon emission credit system to guide public participation.

This paper will analyze the role of individual lifestyle in achieving carbon neutrality, propose feasible plans to change individual lifestyle and guide the public to participate in carbon neutrality.

## **2. Method**

### **2.1. Personal lifestyle -- practicing the concept of low-carbon life.**

Low-carbon lifestyle should include the following aspects:

- (1) Low emission consumption, that is, people in the process of life to minimize the amount of greenhouse gas emissions. Such as reducing low-cost consumption, recycling goods, green travel and so on.
- (2) Economic consumption, that is, people pay attention to saving the use of resources and energy in the process of life, so that their consumption reaches the minimum and most economical. For example, avoid consumerism and practice rational consumption.
- (3) Safe consumption means that the consumption results in the course of people’s life have the least impact on the living environment of the society and the least harm to the health of others. Such as supporting carbon neutral products.
- (4) Sustainable consumption, that is, the consumption process of people’s life can maintain the long-term and stable development of resources, production and life.

Low-carbon lifestyle consumption model guides consumers’ consumption behavior, and provides solutions to the problem of using consumption materials around to meet the needs of their own survival, development and enjoyment. Low-carbon life is based on civilized, scientific and healthy ecological consumption mode, so that people can balance material consumption, spiritual consumption and ecological consumption, and guide human consumption behavior and consumption structure to further rationalize, scientific and rationalized.

### **2.2. Guide the public to participate in carbon neutrality -- make use of big data to**

### **provide new ideas for public participation.**

Establish a personal carbon emission credit system, a voluntary personal carbon budget system. Establish a personal carbon emission reduction APP by means of technology enabling such as big data, blockchain and artificial intelligence. Calculate individual daily carbon emission reduction by calculating personal activities, such as household electricity consumption, gas use, TV, mobile phone, bus, subway, airplane, green shopping or green living, and quantize abstract behaviors into considerable carbon emission data for people to query and record the low-carbon contribution in life, to provide people with the intuitive feeling of practicing the concept of low-carbon life.

Assign a value to individual carbon reduction. Specifically, low-carbon travel, energy conservation and emission reduction are calculated, registered and certified. To achieve specific quantification of individual behavior of energy saving and carbon reduction and assign certain value, further introduce welfare system and policies after achieving certain indicators, effectively guide the public to participate in the practice of low-carbon life and achieve emission reduction. By entrusting individuals with the value of carbon emission reduction and linking the credit of carbon emission reduction with everyone's consumption behavior and eating habits, the public can participate in the realization of carbon neutrality.

Support the inclusion of individual carbon account emission reduction into the national carbon trading market, and establish and develop a positive guidance mechanism that combines commercial incentives, policy encouragement and certified emission reduction trading. Mobilize the enthusiasm of the public, realize the mobilization of the whole people, give play to the role of the individual sector in carbon neutrality.

## **3. Result**

### **3.1. Practice low-carbon life and make contribution to emission reduction.**

Advocating low-carbon life can not only improve public awareness of environmental protection, but also change People's Daily lifestyle and consumption pattern. Raise public awareness of the global challenges posed by climate change and propose simple and easy environmental actions in daily life, such as green consumption and energy conservation; Put forward green living suggestions, such as garbage sorting, household greening, tree planting and other activities to strengthen environmental protection; Provide environmental protection ideas, actively participate in green activities, exchange low-carbon consumption experience, popularize the concept of environmental protection, and save energy in daily life, implement low-carbon life, and take joint actions to slow down the trend of global warming. Low-carbon life should be advocated in response to global climate change. Only when more people change their current high-carbon lifestyle and consciously follow the pace of development of low-carbon economy can the world have the basis for climate security and hope for the future. Therefore, we should vigorously advocate and cultivate the awareness of environmental morality of the whole nation, transform people's low-carbon life into conscious actions, give full play to the role of every citizen in practicing low-carbon civilized life, guide low-carbon production and consumption patterns in effective ways, form a social atmosphere to practice low-carbon, form the consciousness of the whole people, and guide the actions of the whole people with norms. In this way can we make our due contribution to the fight against global climate change.

### **3.2. Use big data to establish a personal carbon emission credit system and guide public participation.**

The quantification and reduction of carbon footprint is the basis for the development of personal carbon purchase business. The development of personal carbon credit market, while incorporating carbon information, helps to standardize the standards of personal carbon footprint calculation and promote the development of personal carbon neutrality and carbon purchase business with the help of market-oriented means.

It is also conducive to the development of carbon finance business. Carbon finance refers to all financial activities that serve to limit greenhouse gas emissions, including direct investment and financing, carbon index trading and bank loans. A large amount of traceable and quantifiable personal carbon information in the personal carbon credit

market, such as personal carbon footprint, carbon neutralization and carbon purchase, and personal carbon assets, can provide a series of data and information for commercial banks to innovate personal carbon finance business.

## 4. Discussion

Global carbon emissions comparisons for year show that household carbon emissions in 2022 reached 3.56GT CO<sub>2</sub>, accounting for 9.85% of the total carbon emissions. Industrial and surface transport will account for nearly half of all carbon emissions in 2022, accounting for 46.8 percent. “Consumption determines production.” Low-carbon lifestyle will mainly affect industrial production and transportation, which account for a large proportion of carbon emissions and are easily affected by the public. “Low-carbon life” not only includes the details of many energy-saving technology improvements in manufacturing and construction, but also includes many energy-saving details in People’s Daily living habits. Thus, individual lifestyle changes have great potential in achieving carbon neutrality. The lifestyle of mass production, mass consumption and mass abandonment seriously restricts the implementation of the strategy of sustainable development and pollutes the ecological environment. It is the consumption led by this wrong idea that has caused the shortage of energy and resources in the world. The advocacy of low-carbon life can not be ignored in the realization of carbon neutrality, which is one of the important links.

Many countries have introduced active market instruments to promote emission reduction in the context of the global response to climate change. The European Emissions Trading System officially launched the world’s first greenhouse gas emission quota trading market in 2005: the United States, Australia and other countries have also established carbon emission trading schemes to trade carbon in a voluntary way. At the individual level, the UK Department for Environment, Food and Rural Affairs has used a carbon emission calculator to estimate the carbon emissions produced by people’s living consumption. It is found that 40% of the UK’s annual carbon emissions directly come from the activities of individuals and households. The Chinese Academy of Sciences pointed out in “Some Policies and Recommendations on China’s Carbon Emissions” that between 1999 and 2002, Households account for 30% of China’s carbon emissions. It can be seen that there is a lot of room to reduce the carbon emissions of residential life. An effective market approach might be to set up an individual carbon trading system.

Climate change is a global problem facing mankind. Carbon dioxide emissions and greenhouse gases of all countries have soared, posing a threat to living systems. In this context, all countries in the world have put forward the goal of achieving carbon neutrality by reducing greenhouse gases by means of global agreement. As citizens of the planet, everyone should participate in the goal of becoming carbon neutral. Changing personal lifestyle, advocating low-carbon life, actively guiding public participation, and establishing personal carbon emission credit system are of great positive significance for realizing carbon neutrality, and we should actively participate in them.

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