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## Examining the Role of Individual Lifestyle Changes in Achieving Carbon

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### Abstract

There are many ways to achieve carbon neutrality. It is not difficult to find that the change of lifestyle has a potential impact on promoting the transition to a low-carbon lifestyle. This paper is divided into three parts. The first part briefly introduces EU carbon neutrality strategy and the influence of lifestyle on carbon emissions. The second part elaborates the important role of the change of personal lifestyle in the aspects of resource saving, transportation, consumption and education. Finally, the conclusion section covers the difficulties of individual lifestyle change and points out more possibilities for low-carbon development in the future.

**Keywords:** Carbon neutrality; carbon emissions; the European Union; individual lifestyle; low-carbon lifestyle.

## 1. Introduction

Since the mid-20th century, studies have shown that human activity may be the main driver of global warming, with a probability of more than 95 percent. It can be seen that individual lifestyle changes play an important role in achieving carbon neutrality.

### 1.1. The EU is committed to achieving carbon neutrality

Under the European Climate Law, the EU has pledged to become carbon neutral by 2050. In order to limit global warming to 1.5C - the threshold considered safe by the Intergovernmental Panel on Climate Change (IPCC) - achieving carbon neutrality by the mid-21st century is crucial. The Paris Agreement, which was signed by 195 countries, including the European Union, also stipulates this goal. In December 2019, the European Commission proposed the European Green Deal, its flagship plan to achieve climate neutrality in Europe by 2050. The EU is committed to an ambitious climate policy. Under the "Green Deal", it aims to become the first continent to reduce carbon dioxide emissions by as much as it produces by 2050. On 7 October 2020, the European Parliament backed climate neu-

trality by 2050 and a 60% reduction in emissions from 1990 levels by 2030, which is more ambitious than the 55% proposal put forward by the European Commission. Members of the European Parliament asked the commission to set an additional interim target for 2040 to ensure progress towards the final goal. In addition, members called for all EU countries alone to become climate neutral and insisted that more carbon dioxide should be removed from the atmosphere after 2050 than emitted. All direct and indirect subsidies for fossil fuels should be phased out by 2025 at the latest. In April 2021, Members of the European Parliament reached an agreement with the Council on the EU's obligation to become climate neutral by 2050. On June 24, Parliament approved the new Climate Law, which increases the current 2030 emissions reduction target from 40% to 55% and makes the 2050 climate neutrality target legally binding. In line with Parliament's recommendations, an independent European Scientific Advisory Committee on Climate Change will be established to monitor progress and assess whether policies are consistent. Currently, five EU countries have legally set climate-neutral targets: Sweden aims to achieve net zero emissions by 2045, and Denmark, France, Germany and Hungary by 2050.

## 1.2. Impacts of lifestyle on carbon emissions

Everyone's daily behavior is producing carbon emissions, which has some impact on achieving carbon neutrality. The aspects of personal life such as resource saving, transportation, consumption and education are all worth investigating. The Association des Constructeurs Européens (ACEA) has released its 2023 report on car use in Europe, in 2021, the EU passenger car fleet grew by 1.2% compared to 2020, with nearly 250 million cars on the road in total. With the exception of Slovenia (-4.1%), all EU countries expanded their car fleet, with the highest growth seen in Slovakia (+8.2%). Luxembourg has the highest car density in the EU (698 per 1,000 people), while Cyprus has the highest density of commercial vehicles (135 per 1,000 inhabitants). By contrast, the lowest density of cars can be found in Romania (396). Lithuania has the lowest density of commercial vehicles (49). 96.4% of all trucks in the European Union run on diesel, while petrol fuels 0.5% of the fleet. Only 0.1% of trucks on EU roads have a zero-emission powertrain.

Globally, residential and commercial buildings, consume over half of all electricity. Phasing out fossil fuels for home heating is crucial, for instance by banning on new gas-fired boilers and introducing electric heat pumps. Increasing the thermostat setting from 24°C to 28°C during the cooling season can reduce annual cooling energy use by more than a factor of three for a typical office building in Zurich, Switzerland. Switching to renewable energy sources, such as solar, wind or hydroelectric power, also means less pollution and new and better jobs. Currently, around 80% of global energy and 66% of electrical generation are supplied from fossil fuels. Every year, an estimated 11.2 billion tonnes of solid waste is collected worldwide, and decay of the organic proportion of solid waste is contributing about 5% of global greenhouse gas emissions. Where waste cannot be avoided, recycling leads to substantial resource savings. For every tonne of paper recycled, 17 trees and 50% of water can be saved. Recycling also creates jobs: the recycling sector employs 12 million people in Brazil, China and United States alone. With one shower of about 10 minutes a day, an average person consumes the equivalent of over 100,000 glasses of drinking water every year. It takes about 7,500 litres of water to make a single pair of jeans -- from the production of the cotton to the delivery of the final product to the store. 85% of textiles end up in landfills or are incinerated although most of these materials could be reused. Every second, the equivalent of one garbage truck full of textiles is landfilled or burned.

It can be seen from the above data that the status quo of lifestyle will still increase urban carbon emissions, so people must change their lifestyle to promote carbon neutrality.

## 2. Results and discussion

Any human activity may cause carbon emissions. All kinds of fuel oil, gas, paraffin, coal and natural gas will produce a lot of carbon dioxide in the process of use. Urban operation, people's daily life, transportation (planes, trains, cars, etc.) will also emit a lot of carbon dioxide. The study here focuses on carbon emissions from everyday life.

## 2.1. In terms of resource saving

The consumption of resources in life generally includes forest resources, mineral resources, water resources, land resources, marine resources and so on. On July 16, 2021, the European Commission issued the European Union 2030 Forest Strategy, which proposed protect and restore primary forests, proposing the goal of planting 3 billion more trees by 2030. Saving paper and reducing the use of disposable utensils and packaging are indicative of lifestyle changes that have greatly increased vegetation cover and reduced the use of trees. People learn about forests from these small lifestyle changes and can consider adding tree-planting activities to their daily recreational activities. This can not only enrich the lives of individuals, but also call on more people to save forest resources.

Encourage people to learn more about and use clean and alternative energy, and reduce the use of gasoline, oil and natural gas in daily life. For example, new energy vehicles can well replace gasoline or diesel cars.

In terms of the optimization of electricity consumption, there are two main points: Firstly, people can choose to install voice-controlled lights in the corridors and other areas of individual residential buildings to reduce the emissions of greenhouse gases generated by electricity. Secondly, in public places, people consciously save electricity.

The use of water resources to develop the good habit of saving water. People in daily life to develop a regular inspection of their own water leakage problems. Also, try to wash your face with a clean washbasin instead of running water for a long time. Even if you wash your face and hands with running water, turn off the faucet when using face wash or hand sanitizer and turn it on when you need to flush. Irrational habits can waste valuable water resources, so change bad habits. Recycle water, water the flowers with rice water, and scrub the floor with water from washing clothes. Making full use of water resources can not only reduce daily living expenses, but also save water resources.

## 2.2. Transportation

The Sustainable Transport - Europe Green Deal sets a target of reducing greenhouse gas emissions from the transport sector by 90% by 2050. Transport accounts for a quarter of the EU's greenhouse gas emissions and is still growing. In addition to macro-control at the policy level, individual efforts are also essential. It is worth mentioning that the frequency of daily commuting is very high, so it is necessary for people to replace driving with low-carbon bicycles. People riding bicycles to and from work can not only exercise, but also contribute to carbon neutrality, so this behavior deserves to be encouraged. The government can set up more bicycle parking spots to nudge more people to ride bicycles.

## 2.3. Consumption

People should be encouraged to spend the holidays at home with friends and family. This way can well replace the previous lifestyle of comparison tourism consumption. It is not only a low-carbon behavior, but also can improve people's happiness.

Besides, as consumers, people are more inclined to buy new goods rather than second-hand ones. Although more and more people are turning their consumption to products made from recycled materials or second-hand goods, these consumption modes are still not mainstream. Changing consumption attitudes requires not only individual efforts, but also policy guidance.

For profit purposes, businesses employ many strategies to stimulate consumption, which are designed to induce consumers to buy more things rather than things they need more. In the face of this situation, individuals need to keep calm and do a comprehensive understanding of their needs, learn to spend money wisely. People should buy food according to the actual use to prevent it from expiring.

## 2.4. Education

The role of education permeates every aspect of personal lifestyle change. At present, it is imperative to use educational activities to popularize and promote low-carbon lifestyle. The purpose of education is not only to teach carbon neutral knowledge to students at basic or higher education level, but also to create awareness of low carbon

lifestyle among the wider population. There are mainly four aspects:

Firstly, by teaching students about carbon neutrality, schools can cultivate more human capital for future societies. Students who learn about the theory and practice of carbon neutrality in school will bring this impact to a wider understanding when they enter the world.

Secondly, as institutions of higher education, schools, especially universities, should practice the concept of sustainable development and teach students to practice low-carbon ways in energy saving, resource utilization, travel, environmental protection, water saving and other aspects. Schools can arrange a series of lectures on carbon neutrality in students' daily courses and invite professors from relevant majors to give lectures to students to broaden their horizons.

Thirdly, students can spontaneously establish a low-carbon life practice group, which can promote the communication among students and impart knowledge about low-carbon life style to each other.

Finally, authorities can spread the specific operation of low-carbon lifestyle more widely through social media, so that people can get carbon neutral knowledge more easily in the fragmented time.

In the context of such rapid development, there is no doubt that carbon-neutral education can permeate the wider population.

### **3. Conclusion**

Individual lifestyle changes play an important role in achieving carbon neutrality. Increasing individual awareness of carbon neutrality is crucial to achieving the overall goal of carbon neutrality across the EU. However, there are still some challenges for individuals to change their lifestyles in a low-carbon direction.

Firstly, it takes a long time for individuals to make the transition to a low-carbon lifestyle, because it takes some time for deliberate practice to abandon old habits and establish new ones. So it will take a long time for the whole society to shift to a low-carbon lifestyle. Secondly, due to the path dependence of individual concept, it is difficult for people to immediately change their dependence on the old way of life to the new direction.

Finally, to get rid of the first two difficulties, people still need to have lasting patience to continue to practice low-carbon lifestyle, so that they can truly contribute to the realization of carbon neutrality.

In the future, when it comes to the utilization of forest resources, people still need to reduce paper waste in daily life. They can use electronic invoice instead of traditional paper invoice after every meal in a restaurant to practice the concept of low-carbon life. In addition, people are encouraged to use recycled tableware and daily necessities. People using bicycles or walking instead of cars can make a big contribution to carbon neutrality. As consumers, individuals consciously practice low-carbon consumption, such as buying second-hand goods, goods made from recycled materials and goods in real demand, which will educate enterprises to shift to a more low-carbon production mode. The positive impact of this operation on achieving carbon neutrality is long term. Colleges and universities actively respond to the concept of sustainable development, and set up lectures on carbon neutral knowledge to popularize low-carbon lifestyle to the young generation of society. It's also important to plan for the future while making lifestyle changes, because the path to carbon neutrality still has to be explored and pursued.

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