

Research on the Development of Carbon Neutral Sports Tourism Industry

Zixian Zhang^{1, a}, Youliang Xu^{2, b} and Xiangying Wang^{1, c*}

¹*School of Physical Education, Shandong Normal University, Jinan, Shandong, China*

²*School of Physical Education and Health, East China Normal University, Shanghai, China*

Keywords: Carbon Neutral, Carbon Neutral Sports Tourism, Sports Tourism, Sports Industry.

Abstract: In 2020, President Xi Jinping proposed in the general debate of the 75th session of the United Nations General Assembly that China will reach the peak of carbon emissions by 2030 and achieve carbon neutrality by 2060, which provides an important strategic guideline for China to build a carbon neutral country. The trend of developing "carbon neutral tourism" in China is unstoppable, so "carbon neutral sports tourism", which is an important branch of "carbon neutral tourism", will also usher in a great opportunity for vigorous development. It is a new force in the sports tourism industry to "adjust the structure and maintain growth". The promotion of carbon-neutral sports tourism is in line with China's national conditions, and should adhere to the pilot project before promotion; adhere to the importance of creativity, turning abstract into concrete; adhere to the promotion of carbon neutral ways of diversification; adhere to the full excavation and development of carbon neutral sports tourism characteristics.

1 INTRODUCTION

The massive emission of greenhouse gases represented by CO₂ is considered to be the main cause of global warming, which is the most serious non-traditional security issue humanity is facing and poses a serious threat to the survival and development of human society. Since the first industrial revolution, the massive burning of fossil fuels and the destruction of forests have brought about rapid economic and social development, but also global environmental problems such as the massive emission of CO₂ and other greenhouse gases. 2020, President Xi Jinping proposed in the general debate of the 75th session of the UN General Assembly that China will achieve peak carbon emissions by 2030 and carbon neutrality by 2060. This provides an important strategic guideline for China to build a carbon-neutral country (Liao, 2011).

Human tourism activities are also responsible for carbon neutrality (Liu, 2021). With the continuous advancement of industrial revolution and the rapid development of urbanization of human society, sports tourism has emerged out of the need of urban residents to relieve the pressure of fast-paced life (Hu, 2021). Sports tourism is different from traditional

tourism and simple sports and fitness activities, sports tourism as the connotation of sports, tourism as a carrier, sports to provide resources, tourism to drive the market, the organic combination of sports and tourism, a special way of leisure and tourism life. As early as in China's "12th Five-Year Plan" will be "the development of green and low-carbon economy" as an important element to promote to the whole society, aimed at advocating green low-carbon, energy saving and emission reduction to deal with the serious global environmental problems. In 2009, China defined the tourism industry for the first time as a strategic and emerging industry of the national economy, and vigorously promoted the integrated development of tourism and sports and other related industries and sectors, and supported the development of sports tourism in areas with conditions. In the "Opinions of the State Council on Accelerating the Development of Tourism" for the first time proposed to advocate a "low-carbon tourism approach", this concept is seen as China's industrial restructuring to promote the development of a low-carbon economy. Tourism is an advantageous industry in addressing climate change and energy conservation and emission reduction, and has great potential for carbon reduction and space for carbon reduction. The trend of developing "carbon neutral tourism" in China is unstoppable, so as an

important branch of "carbon neutral tourism", "carbon neutral sports tourism" will also usher in a great opportunity for vigorous development. It is a new force in the sports tourism industry to "adjust the structure and maintain growth".

2 MATERIALS AND METHODS

2.1 Literature Method

The keywords of "carbon neutral", "sports tourism", "carbon neutral sports tourism" and "sports industry" were searched in web of science, CNKI and Wanfang databases. The keywords of "sports industry" were searched, and the retrieved articles were summarized, sorted and summarized. Through detailed reading of important literature and understanding of the current research progress and results, the focus of this study and research ideas were established.

2.2 Expert Interview Method

The materials and research progress summarized and analyzed in the study were discussed with several experts (faculty members working in environmental protection and sports industry research) and combined with expert opinions to reach the final conclusion of this study.

2.3 Case Analysis Method

We will analyze the excellent projects on carbon neutral, carbon neutral sports tourism and green development of sports industry in representative countries and regions individually, and try to summarize and condense the logical progression, realization path and future prospect of integrated sharing of sports resources through case studies.

3 RESULTS & DISCUSSION

President Xi Jinping attaches great importance to China's carbon emissions as an important policy direction for the 14th Five-Year Plan and beyond. Since September 2020, President Xi has made important speeches on China's carbon peaking and carbon neutrality in several important meetings. China has incorporated carbon peaking and carbon neutrality into the overall layout of ecological civilization construction, and is comprehensively promoting green, low-carbon and circular economic

development (Lin, 2017). Achieving carbon peaking and carbon neutrality is an extensive and profound economic and social systemic change, an inherent requirement for China to achieve sustainable and high-quality development, and an inevitable choice to promote the building of a community of human destiny. The tourism industry, especially the sports tourism industry, should respond positively to the goal of achieving carbon peaks and carbon neutrality in China, put forward the industry's carbon peaks and carbon neutrality goals and construction plans, actively promote changes in tourism consumption patterns, improve tourism product structures, take a refined, high-quality, ecological tourism development path, make industry contributions in the process of energy conservation and emission reduction, achieve carbon peaks and carbon neutrality goals, and make carbon peaks and carbon neutrality a part of the history of high-quality tourism development. We will make our contribution to the industry in the process of energy saving and emission reduction, and achieve the goal of carbon peak and carbon neutral.

3.1 Low Carbon Tourism and Carbon Neutral Tourism

Low-carbon tourism is an important initiative of China's tourism industry to cope with global climate change and energy security. It is a sustainable form of tourism development guided by the concept of sustainable development and low-carbon development, adopting low-carbon technologies and rational use of resources to achieve energy conservation and emission reduction in tourism and maximize the comprehensive social, ecological and economic benefits, and is an important way to promote the construction of ecological civilization. Low-carbon tourism takes energy consumption, environmental pollution and greenhouse gas emissions as the starting point, saves material and energy resources, reduces waste and environmental harmful emissions, and its essence lies in solving the problems of improving energy utilization efficiency and clean energy structure in tourism, using resources scientifically and reasonably, and protecting the ecological environment.

Carbon neutral tourism is an activity in which tourists prevent and control the negative impact of carbon emissions by generating or purchasing carbon offsets and related means for carbon emissions that cannot be reduced or eliminated in certain segments. It is a more pragmatic approach that acknowledges the fact that certain aspects of tourism activities

inevitably generate carbon emissions, and compensates for them through positive actions by tourism companies or tourists themselves (such as planting trees or participating in other environmental projects). Like low-carbon tourism, carbon-neutral tourism is a product of the tourism industry's positive response to global warming and is a practical form of sustainable tourism. Compared with low-carbon tourism, carbon-neutral tourism has newer concepts and measures, and has a much longer way to go on the road to carbon reduction. In carbon neutral tourism, the carbon footprint of tourists can be quantified, the carbon reduction targets are very clear, and the carbon compensation measures are diversified and incentivized, which are features that make it go beyond low carbon tourism. At the same time, this also makes carbon neutral tourism more demanding for tourists or tourism companies.

3.2 The Need to Develop Low-Carbon Sports Tourism

3.2.1 Carbon Neutral Tourism in International Practice

An early adopter of the concept of carbon neutral

tourism in the world is Costa Rica. As early as 2007, the Costa Rican government announced its plan to become the first "carbon neutral" country in the world by 2021. To achieve this goal, the Costa Rican government is focusing on the development and use of clean energy sources such as wind, hydro and geothermal power, and has established a Carbon Emissions Board to manage carbon credits. Tourism, one of the mainstays of Costa Rica, is also an important part of the carbon neutral strategy. Some hotels in the Costa Rican capital have introduced tips for tourists, including more than 20 measures to reduce carbon emissions, and carbon-neutral certified hotels in eco-views have taken technical and design measures to promote energy saving and emission reduction, such as injecting air into the tap water to save water, setting up separate bins for kitchens, and using solar water heaters, taking practical actions to achieve "carbon neutral", and set an example in offsetting greenhouse gas emissions. According to incomplete statistics, 30 countries (regions) have already set carbon neutral vision targets in their development strategies (Table 1).

Table 1: Key elements of carbon neutral vision targets proposed by countries (regions).

No.	Country	Goal Achievement Time	Commitment Nature	Main contents
1	Austria	2040	Policy Declaration	Commitment to climate neutrality by 2040 and 100% clean electricity by 2030, based on binding carbon emissions targets.
2	China	Before 2060	Policy Declaration	On September 22, 2020, President Xi Jinping announced at the United Nations General Assembly that he would strive to achieve carbon neutrality by 2060 and adopt "stronger policies and measures" to reach peak carbon emissions by 2030.
3	Singapore	The second half of the 21st century	Submit to the UN	Avoid committing to a clear decarbonization date, phasing out internal combustion locomotives by 2040, with electric vehicles taking their place.
4	Japan	2050	Policy Declaration	In his first policy address to the Diet on October 26, 2020, Prime Minister Yoshihide Suga announced that Japan will achieve net zero greenhouse gas emissions and become completely carbon neutral by 2050.
5	Germany	2050	Legal requirements	The Climate Protection Act enters into force in December 2019 and plans to achieve carbon neutrality by 2050.
6	European Union	2050	Submit to the UN	In December 2019, the EU released its Green New Deal, which sets out to work towards a net zero emissions target by 2050, with the long-term strategy being presented to the UN in March 2020.

Source: Compiled from the United Nations Framework Convention on Climate Change website, <https://newsroom.unfccc.int/process/the-paris-agreement/long-term-strategies>.

3.2.2 The Overall Sports Tourism Industry Chain Needs to Be Energy Efficient

Sports tourism industry is a comprehensive industry that mainly relies on sports tourism resources and sports tourism facilities to meet various needs of sports tourism consumers by providing sports tourism services. The correlation between sports tourism industry and other industries is extremely high. The development and utilization of each sports tourism resource will lead to the development of many related industries. The industries related to the sports tourism industry mainly refer to the upstream industries and auxiliary industries that provide raw materials and services for the sports tourism industry; they also include industries that share certain service technologies and operational channels with the sports tourism industry, such as transportation, catering and accommodation, mass entertainment, merchandise retail, and communication. All of these industries are closely related to carbon consumption, with a large amount of greenhouse gas emissions, and some of them even consume very large amounts of energy. These conditions are in serious contradiction with China's "12th Five-Year Plan", in which "developing a green and low-carbon economy" is a key element, and the whole society advocates energy saving and emission reduction to cope with the global environmental deterioration trend and maintain the macro background of sustainable and healthy economic development. Therefore, the development of carbon neutral sports tourism must take into account the need for energy saving and emission reduction in the overall industry chain.

3.2.3 Traditional Sports Tourism Lacks a Sustainable Power Mechanism

The development of traditional sports tourism mostly focuses on immediate benefits and ignores the sustainable use of sports tourism resources; it focuses excessively on the economic benefits of sports tourism and ignores the social and humanistic, low-carbon ecological benefits of sports tourism; when developing and operating sports tourism resources, it lacks in-depth research and comprehensive scientific proof, and lacks a detailed and rigorous evaluation and planning system, and develops and operates in a quick and blind manner. Due to the emphasis on development, light protection, resulting in many non-renewable valuable sports tourism resources artificial destruction and waste. Due to the lack of market research and detailed and rigorous evaluation and planning system, the quality of many sports tourism

products fails to meet the carbon neutral requirements, and there is an extreme lack of professional management talents in carbon neutral sports tourism, and the publicity and education of environmental protection awareness and carbon neutral ecological awareness of tourists are neglected, which has become a serious obstacle to the further healthy and sustainable development of the traditional sports tourism industry in China in a carbon-neutral economy and society.

3.2.4 Traditional Sports Tourism Is a Far Cry from The Requirements of Carbon Neutral Sports Tourism

The comprehensive, complex and strongly connected nature of sports tourism reflects the superb drive of sports tourism, so the transformation of traditional sports tourism to low-carbon sports tourism must be supported both through its own improvements and by industries related to the sports tourism industry. In reality, however, with the continuous development of new sports tourism models, the catering and accommodation industry, tourism transportation industry, contact communication industry, and commodity retail industry are increasingly integrated into the sports tourism industry. These industries above use a large number of non-environmentally friendly products in the production and operation process in order to maximize profits, and some industries are themselves high energy-consuming and high carbon industries. Therefore, it is necessary to build a low-carbon sports tourism industry system. From the low-carbon development of a single sports tourism industry to the linked low-carbon development of the entire industrial system, the organic linkage of the industrial chain is formed, and the energy saving and emission reduction of each link on the sports tourism industrial system is done to realize the low-carbon ecological path of the sports tourism industrial system and promote the realization of low-carbon sports tourism as a whole.

3.2.5 The Concept of Carbon-Neutral and Sports Tourism Still Lacks Sufficient Awareness in The Whole Society

From theory to practice, the concept of carbon neutral life needs the joint efforts of the general public, and eventually realize the true meaning of "carbon neutral life" in all aspects of social life. The biggest obstacle to the transition from traditional sports tourism to carbon neutral sports tourism is first of all the tourists' perceptions and the degree of acceptance of carbon

neutral sports tourism by tourists. There is a certain conflict between the "carbon neutral sports tourism concept" and the "traditional sports tourism enjoyment", as sports tourism is a superior experience in the eyes of many tourists, a kind of consumption and relaxation at will, while carbon neutral sports tourism requires conservation, environmental protection, self-discipline, and carbon emission. Many tourists will feel that carbon neutral sports tourism is a kind of pressure, is a kind of fetters; and then there are some local governments and traditional sports tourism industry business developers, there is a high-speed through the sports tourism industry to reflect the "so-called political achievements" of the GDP growth of one-sided thinking, regardless of the healthy and sustainable development of sports tourism industry. This is obviously contradictory to the requirement of carbon neutral sports tourism. The above shows that there is a serious lack of awareness of the concept of carbon neutral sports tourism in the whole society.

3.3 Carbon Neutral Sports Tourism Development Strategy in China

Promoting carbon-neutral sports tourism is in line with China's national conditions, and the State Council's Opinions on Accelerating the Development of Tourism clearly states that tourism development must be energy-saving and emission-reducing, and advocates a carbon-neutral way of tourism that is harmonious between man and nature. The National Tourism Administration's "Guidance on Further Promoting Energy Conservation and Emission Reduction in Tourism" stipulates that tourism industries at all levels should set up energy conservation and emission reduction management agencies and make energy conservation and emission reduction an important evaluation indicator for the development of tourism. Therefore, the development of sports tourism should also take energy conservation and emission reduction as an important evaluation indicator.

First of all, we should insist on trial exploration before demonstration and promotion. Carbon neutral tourism is still a new thing, and its project design, technical support and operation mode are not mature enough, so it is not advisable to start all at once and bloom everywhere (Chen, 2017). Generally speaking, the smaller the carbon emissions from tourism activities, the lower the difficulty of carbon neutrality; the more sensitive the tourist destination is to carbon dioxide, the stronger the urgency of carbon neutrality

implementation; the higher the resource protection fee charged by the tourist destination, the greater the responsibility of carbon neutrality implementation. After sufficient experience has been accumulated, the project will be expanded to other types of tourist destinations.

Secondly, we should insist on attaching importance to creativity and turning abstraction into concreteness. Unlike professionals in the field of ecology and environmental protection, tourists pursue unique, profound and rich experiences. Carbon neutral tourism development should fully consider this point, follow the law of experience economy and creative economy, enhance the experience and creativity, transform the abstract concept into concrete image activities, make carbon neutral tourism become "visible scenery", "touchable enjoyment".

Finally, the characteristics of carbon neutral sports tourism should be fully explored and developed. More so, carbon neutral sports tourism should gradually develop carbon neutral sports tourism projects with sports characteristics and project features based on the advanced concepts and experiences of other categories of carbon neutral tourism projects, so as to enhance the recognition and participation of tourists and potential tourists in carbon neutral sports tourism projects.

4 CONCLUSIONS

Currently, China's energy consumption and carbon emissions are already the second highest in the world, and are expected to rise to the first place by around 2025. At the same time, China has become the world's largest domestic tourism market, and the carbon emissions and emission reduction potential of the tourism industry cannot be ignored. More importantly, a voluntary emission reduction market has taken shape, and more and more individuals are buying carbon offsets to offset the carbon emissions generated by their travel activities, which provides a market base for carbon neutral tourism. According to an online survey conducted by Ctrip in 2009, more than 60% of travelers supported the company's carbon offset program. However, carbon neutrality is a relatively abstract concept, and some tourists have difficulty in understanding its true meaning; individual tourism enterprises lacking social responsibility use it as a marketing booster, and interpret carbon neutrality action as a "public relations show"; the way of carbon neutrality is relatively single, and there are almost no other

options besides planting trees; there is a lack of authoritative carbon neutrality. The lack of authoritative carbon neutral certification and the lack of sufficient transparency and feedback on the investment of carbon neutral costs paid by tourists affects the credibility of carbon neutral tourism projects. In order to solve the above problems, we should actively consider and explore the healthy development path of carbon neutral tourism.

ACKNOWLEDGMENTS

Shandong Province Social Science Planning Research Project (15CTYJ09); Shandong Province Undergraduate University Teaching Reform Research Project (M2018X247)

REFERENCES

- CHEN, R. (2017) Towards a Framework and Promotion Path of Low-carbon Community Physical Activity against the Background of "Beautiful China". *Journal of Nanjing Sport Institute*, 31: 104-107.
- HU, M., CHEN, C. (2021) Research on the Integration of Sports Tourism and Rural Tourism in Guangzhou. *Journal of Guangzhou Sport University*, 41: 42-45.
- LIAO, C. (2011) Study of the trend of development of low carbon sports tourism in China. *Journal of Physical Education*, 18: 53-56.
- LIU, C. (2021) Scientific Connotation, Construction Path and Policy Measures of Carbon Neutrality. *Yuejiang Academic Journal*, 13:48-60.
- LIN, R., XIE, D. (2017) The coupling of greenway sports with urban ecological environment as well as its ways. *Journal of Physical Education*, 24: 63-68.