Frontiers in Business, Economics and Management
ISSN: 2766-824X | Vol. 12, No. 3, 2023

Low-carbon Urban Parks as a Novel Awareness-raising Medium for the "Dual Carbon" Goals: A Case Study of Beijing Wenyuhe "Future iValley" Park

Leyang Zhao

School of International Relations, Beijing Language and Culture University, Beijing 100083, China

Abstract: In the process of promotion of carbon peaking and carbon neutrality strategies in China, it is of great significance to improve the public's awareness and understanding of the content of carbon peaking and carbon neutrality. Against this background, urban low-carbon parks are developing rapidly across the country. This article introduces and analyzes the concepts concerning construction and operation of urban low-carbon parks, and lists the key elements contained in urban low-carbon park. This article also conducts a case study of Beijing Wenyuhe "Future iValley" Park demonstrating the implementation of those concepts and elements in concrete projects as well as their actual effects. By means of the introduction and elaboration above, the article comes to the conclusion that urban low-carbon parks are a new medium that can effectively enhance public awareness of carbon peaking and carbon neutrality.

Keywords: Public Awareness of Carbon Peaking and Carbon Neutrality, Low-carbon Urban Parks, Future iValley.

1. Introduction

At the General Debate of the 75th Session of The United Nations General Assembly in September 2020, Chinese President Xi Jinping announced China's commitment towards specific carbon peaking and carbon neutrality targets — collectively referred to as the "dual carbon" goals. President Xi's statements demonstrated China's accountability as a major economy in the face of global climate change and China's unwavering determination to achieve green, low-carbon, and sustainable development. Using this as a foundation, China has progressively established a "1+N" policy framework for carbon peaking and carbon neutrality, aimed at directing the realization of the "dual carbon" goals from multiple perspectives. Enhancing public awareness toward the "dual carbon" goals, taking nationwide green and low-carbon initiatives, as well as accelerating the adoption of green and low-carbon lifestyles, are all integral components of China's "dual carbon" policy framework.

2. Raising Public Awareness Toward The "Dual Carbon" Goals: A Brief Background

Research suggests that in 2012, residence-generated carbon emissions across China amounted to about 2.27 times that in 2002, reaching 2.97 billion tons. Fast forward to 2019, this particular emission amounted to 3.724 billion tons, accounting for one-third of the total carbon emissions for the year. Thus, reducing residence-generated carbon emissions crucial in China's pursuit of achieving its "dual carbon" goals. To encourage that, the initial measure is to enhance the public's understanding of the "dual carbon" goals and related policies. However, according to a 2023 survey, respondents are relatively unaware of new concepts such as the "dual carbon" goals and the "carbon inclusive" mechanism, with a considerable proportion displaying unfamiliarity with both concepts. These discoveries evidently call for further strengthening and innovation of the public-oriented "dual carbon advocacy" campaign.

3. The Concept of Low-carbon Urban Parks and Their Advantages as An Awareness-raising Medium for the "Dual Carbon" Goals

Low-carbon urban parks involve careful consideration of carbon dioxide reduction throughout the entire process of planning, construction, management, and service for the parks, emissions mitigation or absorption via various measures during the construction and operation of the park, as well as the demonstration of emission reduction's achievements to the public through different channels.

The core concept of low-carbon urban parks can be broken down into two parts:

1) Low-carbon construction: Low-carbon ideas and solutions are utilized in the construction of urban parks; ecology, energy, architecture, transportation, and resource recycling are five aspects considered in the low-carbon construction of urban parks.

2) Low-carbon operation: Focus is preliminarily set on low-carbon facilities in urban parks to facilitate low-carbon operations, which are expectedly built upon six components: the carbon-inclusive mechanism, awareness campaigns on low carbon, low-carbon digital display platform, carbon sink pilot development, product carbon footprint, as well as low-carbon and zero-carbon evaluation.

The fusion of these components results in a multi-dimensional and concrete publicity medium that effectively promotes public awareness toward the "dual carbon" goals.

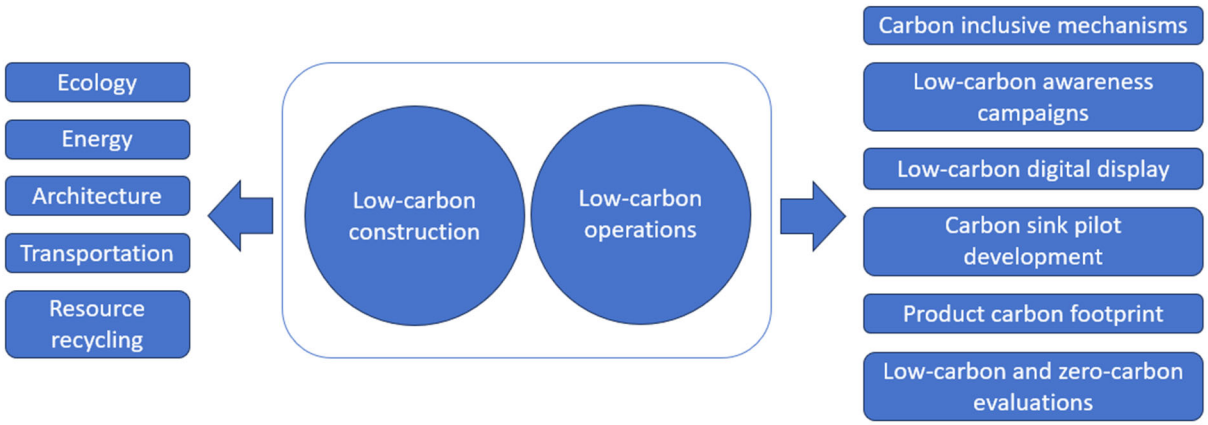


Figure 1. The core concept of low-carbon urban park

At present, low-carbon urban parks are being gradually built across China, representative ones include Wenyuhe "Future iValley" Park in Beijing, Yuexiu Carbon Neutral Park in Guangzhou, Baoding Low Carbon Park in Hebei, Yibin Carbon Neutral Technology Park in Sichuan, Chishan Low Carbon Park in Jinhua, Hangzhou, and Putuo Zero Carbon Park in Shanghai. Through the introduction of various low-carbon facilities and operational concepts, the aforementioned parks have captured the public's attention and welcomed a surge of visitor. Simultaneously, as the sites show the concept of low-carbon living in cities, it has established a positive social image and served as an experimental pilot for promoting public awareness toward the "dual carbon" goals.

4. Introducing Low-carbon Urban Facilities in Beijing Wenyuhe "Future iValley" Park

Wenyuhe "Future iValley" Park is Beijing's first "carbon neutral" theme park. It unveiled its 490,000-m^2 Phase I project at the end of 2021, having fully integrated zero carbon principles into its construction and maintenance. Wenyuhe "Future iValley" Park embodies the principles of low-carbon urban parks, demonstrating them through three specific concepts: low-carbon and intelligent interactive facilities, low-carbon operations, and low-carbon scenarios. These concepts are concretely reflected in six low-carbon scenarios: low-carbon stations, fun carbon activity squares, ecological parlors, "carbon" roads, exploratory carbon knowledge area, and children's carbon knowledge gardens. At the same time, the park has implemented a "carbon credit" system as a part of the low-carbon operations and an internal "carbon inclusive" mechanism. Visitors can acquire and redeem their carbon credit points by scanning specific QR codes found all over the low-carbon scenario areas via the mini programs.

1) Low-carbon stations

Low-carbon stations offer public services, exhibition displays, and smart management functions, with a primary focus on demonstrating the park's dedication to promoting green and low-carbon growth. The facilities include intelligent garbage bins, low-carbon knowledge Q&A interactive screens, and low-carbon creative design sketches.



Figure 2. A low carbon station in Wenyuhe "Future iValley" Park

2) Fun carbon activity square

Fun carbon activity squares offer carbon credits for engaging in low-carbon activities through intelligent facilities and educational entertainment. The facilities include low-carbon virtual cycling, intelligent seats, intelligent sorting trash cans, and intelligent displays.



Figure 3. A fun carbon activity square in Wenyuhe "Future iValley" Park

3) Ecological parlors

Within a considerably vast space lies a rural land with sparse forests and grasslands, while small catchment wetlands are formed in depressions, collectively displaying a rich biodiversity. The facilities include low-carbon creative sketches and "plant identity" scans.



Figure 4. Ecological parlor in Wenyuhe "Future iValley" Park

4) "Carbon" roads

A floating wooden-plank path forms a part of the "carbon" roads, wherein pictures, inscriptions, and facilities provide insight into the carbon sink capacity of different plant varieties. Primarily comprised of inventive low-carbon sketches, this section seeks to enhance the public's understanding of the carbon sink function of a natural green environment.



Figure 5. A "carbon" road in Wenyuhe "Future iValley" Park

5) Exploratory carbon knowledge area

Artistic installations are set up in carbon sink woodland, allowing visitors to learn about forest carbon sinks in considerable depth through the small peep holes. The facilities primarily consist of intelligent displays and low-carbon sketches.



Figure 6. An exploratory carbon knowledge area in Wenyuhe "Future iValley" Park

6) Children's carbon knowledge garden

Various entertainment facilities have been built here to attract adolescents and children to stay and naturally learn about the concept of carbon neutrality throughout the game.



Figure 7. A children carbon knowledge garden in Wenyuhe "Future iValley" Park

7) The "carbon credit" system: a key part of the park's low-carbon operations

"Carbon credits" can be acquired and redeemed by scanning various QR codes all over the park using the mini program. The acquirable credit depends on the prevailing low-carbon scenario set out of the six scenario modules within the park.



Figure 8. Overview of the "carbon credit" system

Through field visits and information collection from different channels, Beijing Wenyuhe “Future iValley“ Park effectively embodies the idea of low-carbon parks, establishing itself as a trailblazer in the realm of Chinese low-carbon parks. It is estimated that the park's operation will bring about 13000 tons of carbon dioxide reduction and the desirable effects. The park, since its opening in late 2021, has drawn significant social attention, having welcomed over 4 million visitors. As a result, several low-carbon scenario areas within the park have also gone viral, gaining widespread popularity online. At the onset of 2022, the park made its appearance on Hunan TV's hit show, "Day Day Up", garnering considerable viewership. It also generated social media buzz in platforms like Douyin and Weibo, as well as received exclusive coverage from BRTN and other mainstream media channels. A series of low-carbon themed public activities organized by the government or enterprises were held in the park, making it Beijing’s biggest ally in the capital’s mission to promote public awareness toward carbon neutrality.

5. Conclusion

Low-carbon urban parks are powerful media in the popularization of the “dual-carbon” knowledge to the public, featuring a combination of education and touring. More intuitive understanding is developed by incorporating multiple scenarios to vividly portray the “dual carbon” concept, while digital information tools such as apps and mini programs are employed to facilitate public engagement, offering them rewards in addition to expanding their understanding of the “dual carbon” concepts. By making the “dual carbon” popularization into a two-way interaction, people are now much more eager to learn, thereby playing a vital role in encouraging citizens to incorporate green and low-carbon concepts into their lifestyle and means of production.

References

[1] Xuedu Lv, Analysis and Future Development of China‘s Carbon Market, Journal of Sustainable Development (2023).

[2] Green Inclusive Technologies (Beijing) Co., Ltd, Online Survey Report on the Public’s Low-Carbon Awareness and Low-carbon Behavior in China (2023).

[3] Yi Li, Construction of Urban Parks under the Background of Carbon Peaking and Carbon Neutrality, Journal of Future Urban Design and Operation (2023).