

The Research of the Development of Tourism Industry Based on the Concept of Low Carbon

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Abstract—As environmental problem has drawn the focus of people's attention; low carbonization has become the trend of world's economic development. In this background, low carbon tourism is becoming a new traveling fashion and tourism attitude. So, low carbon tourism will become the new development direction of the tourism industry in the near future. This article begins with the low carbon economy and low carbon tourism concept, and then introduces the basic concept system of low carbon tourism. In the second part of the paper, using the concept of low carbon, it puts forward the development strategies of tourism scenic spots, hotels, travel agencies and tourism transportation.

Keywords—low carbon; low carbon tourism; tourism industry; development strategy

I. INTRODUCTION

As we all know, environment problem has been come into a very serious condition. Protecting the environment is everyone's responsibility. As a tourist, they should also do this. Under the circumstances, low carbon also gradually goes into the people's perspective. Nowadays, low carbon has become a trend. Low carbon concept has been extended to all fields of life; low carbonization has become the trend of world's economic development. At the same time, it provides some new ideas and opportunities for the development of tourist cities and traveling scenic areas.

II. THE THEORETICAL BASIS OF LOW CARBON TOURISM RESEARCH

A. The Basic Concept of Low Carbon Tourism

1) *Low carbon*: The word "low carbon" is first put forward by the authorities in 2003, the UK energy white paper "our energy future: creating a low carbon economy", however, it began to draw people's attention in recently years, and become popular in social and economic fields.

Low carbon, just as its name implies, is refers to the lower (or much lower) of the greenhouse gases (carbon dioxide) emissions, is the characteristic of ecological civilization. Economic development must minimize or stop the dependence on carbon fuel, and realize energy transformation and economic transition. Low carbon has become an important development direction and trend of the world economy. At the

same time, low carbon society, low carbon economy, low carbon production, low carbon consumption, low carbon life, low carbon city, low carbon community, low carbon households, low carbon tourism, low carbon culture, low carbon way of life and other nouns are producing; low carbon has gradually occupied every aspect of our life. Weather we can realize a low carbon life or not, depends on the change of human energy consumption concept and consumption patterns.

2) *Low carbon tourism*: With the rapid development of low carbon economy, low carbon penetration to each industry of the economic development and all aspects of social life, and tourism is closely related to environmental issues. So, under this big background, low carbon tourism arises at the historic moment.

Popular speaking, low carbon tourism is a kind of clean, ecology and green travel patterns. The concept of "low carbon tourism" was formally proposed in May 2009, in the report of the world economy forum "towards low carbon travel and tourism industry". The report was accomplished by joint investigation of the world tourism industry, aviation, shipping and land transport industry. The report indicated that the carbon emission of tourism industry (including transport which is related to tourism) was accounted for 5% of the world's total, including shipping accounted for 2% and pure tourism accounted for 3% [1]. Tourism, therefore, using the new development model of low is totally accord with the requirement of sustainable development. Low carbon tourism is mean that in tourism activities, tourists should reduce carbon emissions as far as possible, and chooses transportation of low carbon dioxide emission such as bike or hiking and so on. Personal travel should carry environment-friendly bags, live in green hotel and advocate green travel based on low energy consumption, low pollution and low carbon emission. At the same time, the government and the travel agencies should launch low carbon policies and low carbon travel routes, and propaganda of the project so that the tourists can choose low carbon travel route as far as possible when they are going to travel. These are all deep performance of low carbon tourism.

B. Research Review of Low Carbon Tourism

1) *Research review of foreign low carbon tourism*: Since the low carbon is a new kind of development mode that is to be known in recent years, so at present around the world, low

carbon tourism research is still in its infancy, the concept of low carbon tourism is still no definite conclusion. So, the researches of low carbon tourism need to continue to work hard. Nataliaabatchnaia-Tamirisa used the input - output method to evaluate the tourists' energy demand in Hawaii, explored the relationship between energy use and travel destination; Stefan G Ssling thought energy use was the important aspect of tourism affects the global environment; Susanne Becken has published a series of articles studied travel energy utilization from the use of patterns, energy use, transportation, and other point of view.

The research has found that tourism energy consumption has a strong relation with tourist behavior. Tourists' selection of different traveling ways, different accommodation facilities and even diet affect the energy consumption of travel process. Later, with the global climate warming, people pay more attention to the greenhouse gas emissions, appeared a lot of literatures which research on tourism's greenhouse gas emissions.

By collating the foreign literature we can find that foreign researchers pay attention on relationship between tourism and global climate's change, quantitative measure of tourism carbon emissions, strategy research of low carbon tourism, however, there is no system discuss and research on related concepts of low carbon tourism. Overseas researches of low carbon tourism carry out earlier than domestic, so the literature is relatively rich. Many countries are concerned about the development of low carbon tourism and have a detailed database of related official statistics. And overseas researches for low carbon tourism mainly focus on the measurement of carbon emissions during tourism process in order to quantitative research the impact of tourism carbon emissions on the environment.

2) *Research review of domestic low carbon tourism*: Different from abroad, the domestic low carbon research was started in recent years, so literature was less. In all kinds of literature retrieval site input low carbon tourism, we can only find a few articles, and they are close to a year or two.

In May 2009, Liu Xiao published a paper in the journal of "China collective economy" titled "Theory of low carbon economy and low carbon tourism", this is the first paper of low carbon tourism. In this article, the author made the comprehensive interpretation of the concept of low carbon economy and expounded the function and development prospects of low carbon economy. Furthermore, the article used the concept of low carbon economy proposed the concept of low carbon tourism, pointed out that low carbon tourism was based on low energy consumption, low pollution of green tourism. Because of the low carbon tourism has a clear concept and goal, so it should become the target of the tourism sustainable development. Since then, starting in September 2009, due to the low carbon concept continues to heat up, reports and research articles of low carbon tourism increase rapidly. In 2010, studies of low carbon tourism have come into the climax stage.

The current domestic research on low carbon tourism can be divided into three categories:

a) *News reports class*: This kind of articles mainly introduce the concept and the relevant knowledge of low carbon tourism to tourists, at the same time, propaganda the construction of low carbon scenic spots in every region, guide the tourists choose low carbon travel way.

b) *The example analysis class*: This sort of articles preliminarily expound the concept and connotation of low carbon tourism, focus on successful cases of low carbon tourism, and summarize successful experience from the cases, finally, put forward suggestions for the development of low carbon tourism.

c) *Research explores class*: This part of articles carry on the thorough analysis of low carbon tourism, point out the main achieve path of low carbon tourism, propose low carbon tourism development goals for the future.

Overall, how to promote low carbon tourism in the process of tourism activities and realize ecological tourism industry without reduce the quality of tourism activities, remain to need further research and practice.

III. TOURISM INDUSTRY DEVELOPMENT STRATEGY BASED ON LOW CARBON

A. *Development Strategy of Scenic Area Based on Concept of Low carbon*

The construction low carbon scenic area should rely on the joint efforts of government, enterprises and the public.

1) *Development strategy of low carbon scenic area based on government*: The construction of low carbon scenic spot should have appropriate government's intervention. As policy makers and practitioners, government is the most important participants in building low carbon scenic spot. It takes the responsibility of setting policy, constructing standard, creating markets, and guiding enterprises and public transform the mode of production and consumption.

Right now, one of the most important jobs to build low carbon scenic spots is to develop low carbon scenic spot evaluation mechanism, relevant standards and the statistical monitoring system of "carbon emissions". It can not only deepen and promote low carbon scenic area's construction, but also to provide scientific data support for the macro "carbon reduction" decision-making. The most important thing is that it can provide basic information about index verification of the future low carbon scenic spot and the progress of the reduction project. So to speak, to establish a set of perfect and scientific evaluation mechanism and standard system is the urgent affairs for build low carbon scenic spot, which is also the premise of low carbon scenic spot's future development. This work must give play to the guidance role of government, coordination of short-term and long-term interests, integrate all kinds of policy objectives, and achieve a win-win situation about low carbon scenic spot construction and market benefit in the end [2].

2) *Development strategy of low carbon scenic area based on enterprise*: Scenic area is the implementation object of low carbon policy, and also is the main body of market. Encourage

should be given to those scenic area who have innovation consciousness and related construction foundation to speed up the low carbon build. The construction of low carbon tourism scenic spots should follow several aspects.

a) *Transform the existing management mode of scenic area:* Scenic area construction should use environmental protection material, mode of transportation should choose a hybrid car, electric cars, bicycles and other low carbon or carbon-free way, motor vehicles should prohibited[3]. Scenic spot can establish carbon counter so that can let visitors know carbon emissions caused by their activity personally and make them aware of the necessity of low carbon[4].

b) *Promoting intelligence development of the scenic spot:* Improve the monitoring network system of scenic spots, realize digital network management of scenic resources, integrate various resources effectively. The spot can also develop electronic guide, which can save manpower and material resources.

3) *Development strategy of low carbon scenic area based on public:*The key low carbon scenic spot can be created success is whether the visitor can consciously to take low carbon tourism activities. They must have the subject consciousness and identity, participate in construction of low carbon scenic spot. As the main body of tourism, tourists should pay attention to the details, set up the "associative" energy conservation and environmental protection consciousness, control or reduce the carbon footprint of personal and equipment, do make efforts to protect and improve the environment, to be a "low carbon tourist". According to the study, garbage take by tourists are the main source of the scenic spot garbage, so reduce the tourists garbage can control the total of garbage. For garbage processing, the scenic spot can use the "reduce-reuse-recycling-renewable energy" model, introduce energy conservation and emission reduction technology timely and comprehensive, and reduce carbon consumption.

B. *Development Strategy of Hotel Based on Concept of Low Carbon*

1) *Hotel design should follow the low carbonization:*The hotel need to concern about low carbon design at the beginning of the plan, and try their best to complete it in one-time. First of all, the construction of the hotel should make full merge with local natural and cultural environment, pay attention to environmental and resources protection and utilization. Secondly, in terms of decoration, the hotel should make full use of the building space, do not use high hollow corridors, inside patio and other big energy dissipation design. In addition, the hotel should select green, safe and healthy construction materials and decorate way. Finally, geothermal energy, solar energy, wind energy, hydropower and other renewable energy must be actively use, realize the energy diversification and resource recycling use [5].

2) *Carry out low carbon system construction:*The hotel should establish and improve the energy efficiency supervision

and management system, make energy consumption situation analysis report, and let it become an institution.

3) *Daily operation of low carbon*

a) *Decrease the times of cotton goods change according to the customer intend, and set different room prices as incentives:* Washing department should use water, electricity and washing detergent reasonable, design a scientific work process, and reduce washing time. Experts calculated that the hotel can save 0.03 KWH, 13 liter water and 22.5 grams of washing powder by reduce one time of bed sheet change, and can cut down 50 grams of carbon dioxide correspondingly[6].

b) *Reduce disposable goods:* The star hotel consumption of one-time toiletries 1.2 million sets every day in China. Disposable goods can't recycle, and the society faces secondary processing waste problem. At the same time, encourage guests do not use disposable chopsticks is also one of the low carbon environmental protection measures.

C. *Development Strategy of Travel Agency Based on Concept of Low Carbon*

At present, the role of the travel agent in the implementation of low carbon tourism is mainly focused on the development of low carbon tourism routes, and carries on the propaganda. So, in this way can make visitors understand low carbon tourism, and then choose low carbon travel routes, to make contribution to the development of low carbon tourism.

1) *Complete the propaganda work, give full play to their role as the bridge:*As the organizer and guide of tourist activity, travel agency is the first one contact with tourists and directly affects their tourist decision. Travel agencies are provide services for the tourists, so they can make full use of the this opportunity to promote the tourists for low carbon tourism knowledge, guide the tourists carry out tourism activities in the form of low carbon. On the one hand, the travel agencies can deliver low carbon tourism product and the service concept to tourists. On the other hand, they can also feedback suggestions and requirements to travel department to prompting them to improve.

2) *Design new products elaborately:*Low carbon tourism product's design is a series of work, including food, accommodation, transportation, traveling, shopping and entertainment. In the process of the whole tourism, we must fully conform to the requirements of low carbon travel. Low carbon tourism is not to add a low carbon coat to traditional public sightseeing tour, but need redesign and excavate attractions conforms to the concept of low carbon tourism. In this way, the travel agencies can dig the connotation of tourist attractions by using low carbon technologies, at the same time; can pack the high low carbon technical product into tourist attractions directly.

D. *Development Strategy of Tourist Traffic Based on Concept of Low Carbon*

1) *Construction of tourist traffic network, optimize traffic structure:*To achieve the goal of low carbon transportation and

optimize the transportation structure, need to undertake multimode combination and complementation. This doesn't mean blindly choose low energy consumption network transport, but to choose the appropriate transportation according to the characteristics of each transport and the difference of distance and location.

2) *Organize travel train*: Travel in a group when you travel, try to organize tourist train, in order to reduce the increased carbon emissions by transfer.

3) *Low carbon scenic spot the traffic*: Scenic traffic should use green transport such as electric cars, bicycles and other low carbon or no carbon transportation, especially encourage walking.

4) *Design low carbon tourist road*: Travel path should use green environmental protection material, afforest of either side

of the road and drainage facilities should be done by high standards.

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