

Green Exhibition Practice Approach Based on Circular Economy Theory

Xifang Wang, Ruijuan Dai*
 Management School
 Wuhan Technology and Business University
 Wuhan, China

Abstract— With the rapid development of social economy, exhibition industry, as an important part of the tertiary industry, plays an increasingly important role in the development of national economy. With the attention of human being to environment and resources, the call of developing green exhibition comes into being. But at present, the research on "green exhibition" at home and abroad is still in the preliminary stage of exploration. Based on the theory of circular economy and the problems existing in the development of green exhibition in China, this paper attempts to explore the practical ways of green exhibition and puts forward corresponding countermeasures.

Keywords—Circular Economy; Green Exhibition; Practical Approach

I. OVERVIEW OF THE GREEN EXHIBITION

At present, the research on "Green Exhibition" at home and abroad is still in the exploration stage, and there is not a uniform standard for the definition of green exhibition concept. that "green exhibition" must meet the requirements of three aspects: (1)Green exhibition is those for exhibitors, audience and other products and services to meet the full use of resources, harmless to the human body exhibition ; (2) Green exhibition refers to the adoption of a series of effective hardware and software management measures, so that the exhibition activities on the environment to maintain a low level, at the same time on the basis of energy saving to reduce the operating costs of exhibition projects, to achieve environmental protection and exhibition project economic Benefits Harmonious Unity; (3) The operation and development of Green exhibition does not take resource consumption as the original driving force [1].

In line with the concept of maintaining the earth and sustainable operation, green exhibition attaches great importance to environmental protection, avoids unnecessary pollution and waste, and returns the pure space to the earth. Secondly, it should lead the sustainable development of human beings, advocate low-carbon life from the whole industrial chain of exhibition, pay attention to the efficiency of item recycling and energy saving, and let human beings constantly pursue the return of green in nature.

In recent years, the exhibition industry has become one of the important engines of local economic development. With the development of exhibition industry to today, people with insight in exhibition both at home and abroad are exploring new exhibition development mode, and green exhibition is

undoubtedly the trend of future development of exhibition. In Germany, the United States, Japan and other developed countries, the exhibition industry in line with the maintenance of the earth, the concept of sustainable management forward. The future trend of the exhibition industry will be to pay more attention to environmental protection, avoid unnecessary pollution and waste, and return the pure space to the earth [2]. The concept of green exhibition covers a wide range of issues, including the use of public transport, reduction of paper printing, reduction of paper cups, recycling of materials used in the facilities of the exhibition booth, etc., which are all environmental concerns at present.

At the 6th conference and exhibition culture festival, more than 600 professionals from more than 50 cities at home and abroad called for China's conference and exhibition activities to match the trend of "low carbon, environmental protection and green" and develop China's conference and exhibition industry into an environment-friendly green industry [3]. Wu Jiang Min, honorary chairman of the BIE, also believes that with the rise of developing countries, the development of China's exhibition industry towards low-carbon and environmental protection is an inevitable trend. "The modern exhibition industry must follow the trend of low-carbon and environmental protection in order to develop healthily," he said. Lu Haiying, director general of the China convention and exhibition council, said, "green exhibition has received great attention and financial support from the government in developed countries, but some domestic exhibition projects still have the disadvantages of extensive management, and the construction of venues has caused great waste [4]. The impact of the new exhibition is on the traditional exhibition force us to change the current thinking development. Passive or active, we must change, only in this way can China's exhibition industry faster forward drive.

It can be seen that the concept of green exhibition has a wide range. First, it should return the pure space to the earth. Secondly, it should lead the sustainable development of human beings, advocate low-carbon life from the whole industrial chain of exhibition, pay attention to the efficiency of item recycling and energy saving, and let human beings constantly pursue the return of green and blue in nature.

II. CHARACTERISTICS OF CIRCULAR ECONOMY

The theory of circular economy was put forward by an American economist in the the 1860s, and its core is the

Wuhan technology and Business University:Research on the Development Model of Green Exhibition Based on Circular Economy Theory(A2014005)

principle of "3R", that is, in the process of economic development, resources should be "reduced" and "recycled" and "reused", so as to reduce the amount of resources invested and improve the efficiency of resource utilization. At the same time, reduce the amount of waste discharged, and transform the economic development model from the traditional "high mining, low utilization, high emissions" to "low mining, high utilization, low emissions [5]." In the circular economy, the new system view is that the cycle refers to the process of repeated movement within a certain system, and the system of circular economy is a large system composed mainly of people, resources, science and technology, etc., which can be said to be an important embodiment of adapting to the objective economic law. In the traditional industrial economy, where capital is circulating and labor is circulating, natural resources are not involved, and the idea is to maximize the development and use of resources and to create as much social wealth as possible [6]. However, in the new production concept of circular economy, circular economy is an economic model developed on the basis of material circulation and regeneration, and it is also an economic development model based on resource recovery and recycling.

Circular economy is a kind of feedback or closed circulation economic system of "resource -- product -- renewable resource -- renewable product", and its essence is a kind of ecological economy. It requires the application of ecological theory to guide the economic activities of human society [7]. It is an ecological economic development model with the main characteristics of clean production, resource recycling and waste efficient recycling and utilization. Circular economy has two goals: one is the concept of resource conservation, and the other is environmental protection. The circular economy follows the three r principles, which are Reduce, Reuse and Recycle. This circulation system can alleviate the contradiction between the huge resource demand and consumption caused by the lack of resources and the rapid economic development, and make the utilization of resources harmless, reductive and resource-based.

Developed countries have established the sustainable development strategy of developing circular economy and building circular society since 1990s. China started late in developing circular economy. In order to promote the development of circular economy, the government increased the support of economic policy, industrial policy, technology policy and consumption policy, and improved some laws and regulations in education policy and legal guarantee to promote the rapid development of circular economy. Developing circular economy has been accepted by the party central committee and the state council and has become the national development strategy. The circular economy promotion law of the People's Republic of China was passed on August 29, 2008 and came into force on January 1, 2009.

In order to achieve the "harmless, reduced and resource-based" waste treatment, it is necessary to change the current waste treatment process with high input, low utilization rate and high pollution with the concept of circular economy, so as to produce positive effects on society, economy and ecology. From the perspective of the main body of the circular economy itself, enterprises implement clean production to

reduce waste emissions; Consumer awareness, increase the recycling of waste; The government has stepped up regulation. From the perspective of industrial chain, the government can set up a domestic waste information platform. With the improvement of the communication platform, recyclable waste can be recycled, and non-recyclable waste can be disposed through sanitary landfill and incineration [8]. From the perspective of society as a whole, human, financial and material resources of the society should be utilized to jointly improve the garbage disposal system and realize the reuse of household garbage.

III. NECESSITY OF DEVELOPING GREEN EXHIBITION INDUSTRY

A. *The Inherent Demand of the Development of Green Exhibition Industry*

The successful holding of an exhibition will bring great economic benefits, but it will also cause a lot of energy consumption. A study has shown that the cost of an exhibition in energy consumption accounts for more than 10% of the exhibition's operating income, it can be said that resource consumption is one of the main costs of exhibition activities. According to a recent survey data, the average annual power consumption per unit area of a general exhibition venue is 100~200 Kw/m², which is 10~20 times of the electricity used by residents. Large-scale exhibition halls mostly use central air-conditioning systems, and air-conditioning power consumption accounts for 50% to 60% of total annual electricity consumption, most of which are decoration materials and promotional materials [9], but also to aggravate the exhibition on the consumption of resources. Scientific grasp of the connotation of "circular economy", so that the proportion of various elements in the industry is reasonable, the development of green exhibition is conducive to the effective allocation of resources, promote the exhibition industry to continue to refine, ecological and other aspects of development, is conducive to the exhibition industry's various interest subjects, for the development of the industry to speed up.

B. *Needs for the Development of Exhibition Industry and Technological Innovation*

The temporary display nature of the exhibition determines the fact that it will create a lot of rubbish in a short time. In previous years, a study conducted by the International Exhibition Alliance showed that in 2001 alone, each exhibition produced 60~12000 tons of waste, making an average of 2900 tons of waste. Meanwhile, in 2001, waste from 823 major exhibition licenses in the UK cost 730 million of dollars. During the same period, the Plastics Companies Association carried out garbage collection for an international exhibition held every three years with the participation of 63,000 people. In 2003, 151,942 kilograms of garbage were cleared at the NPE100 Square Foot Exhibition Site. Even to this day, the problem remains unresolved, and a great deal of garbage has caused serious damage to the environment in the region. As the exhibition project is a temporary display, due to cost and display effect considerations, environmental

protection materials market share is low, the price is generally high, resulting in the use of a large number of non-compliant with the state's provisions of the exhibition materials. The development of circular economy must take technology as the core, only innovative technology, can reduce costs and expand the market, in order to make the current domestic "extensive" exhibition economy to "refinement" mode of development.

IV. PROBLEMS EXISTING IN THE DEVELOPMENT OF GREEN EXHIBITION INDUSTRY IN CHINA

A. Low Standard-Reaching Rate of Exhibition Sites

The exhibition sites are the foundation and carrier of the development of the exhibition industry. The modern exhibition sites are the symbol of the development of the regional exhibition industry. In recent years, all over the country are to speed up the construction of exhibition sites and their supporting facilities. However, the number and quality of these sites or supporting facilities have not yet met the requirements for the construction of exhibition cities. Taking Shijiazhuang as an example, the important exhibition sites in the city include Shijiazhuang People's Hall, Shijiazhuang International Expo Center, Zhuoda International Exhibition Center, and Hebei Art Center, etc. However, the most of these exhibition venues still lack the ability to host large-scale exhibitions. Once a large exhibition has been implemented to the various venues, the basic still follow the traditional high consumption, high emission methods to support the exhibition project. There is no small improvement in the internal hardware of the Convention and exhibition venues, but it is still very backward compared with the large exhibition cities abroad. Although the venue near the matching service facilities are relatively complete, but the service utilization rate is not high, targeted exhibition services are also very rare, in fact, these are also China's Green exhibition development of a major bottleneck.

In the development of circular economy, the government, as the main body of responsibility, must play a good role in guiding the development of circular economy. In particular, in order to further solve the defects existing in China's current market economy growth, the government should give full play to its guiding and correcting functions, and use administrative, legal, economic, fiscal and other means to regulate the circular economy, so as to ensure the healthy and stable development of the circular economy. First, it is necessary to closely combine the overall planning of Tie Li city's ecological economy and the sub-planning of various industries to compile the circular development planning of enterprises, parks and the whole city, so as to make the circular concept run through all fields and levels of China's economic activities and economic construction. The second is to improve the government's support system, so as to establish a good incentive mechanism for the circular economy. For example, in terms of investment policies and actual choice of investment projects, the government should play a role of encouragement and restriction, so as to adjust the industrial structure and promote the development of the circular economy [10]. For example, give policy support in priority development of cow manure resource treatment, industrial

coal ash utilization, efficient utilization of straw returning to the field, multi-skilling circulation and other aspects; Third, the special institutions for developing circular economy should be formed to carry out regulation, planning and inspection to guide the development of circular economy.

B. Lack of Authoritative Green Exhibition Reference Standard

At present, the practice of "green exhibition" at home and abroad is still in the exploration stage, some exhibition enterprises have issued standards on green buildings and green construction, the Beijing Olympic Games and the Shanghai World Expo have also published strict green construction standards. However, from a national perspective, most of the green building and green construction standards for exhibition projects have not yet been published, even in large cities with relevant standards, many exhibition projects have not been in accordance with green standards and construction requirements to audit the design, construction, operation of the project.

It has become a fashion to use reusable and biodegradable building materials in the design of exhibition buildings. Designers from all over the world try their best to cater to the ecological and technological exhibition trend, not only to express their concern for the environment, but also to minimize the waste and consumption of energy.

C. Green, Recyclable Materials Are Used in a Low Proportion

The efficient operation of the exhibition project can not be separated from the urban infrastructure, service facilities and the corresponding hardware and software environment, including traffic conditions, living conditions, catering conditions, communication conditions, civilization greening level. In order to pursue outstanding exhibition effects and consider temporary properties, the use of wood, board, paint and other materials that do not comply with national regulations is used, and the proportion of recyclable materials is low.

Exhibition props are mainly used to divide exhibition space, foil and protect exhibits, and guide the passenger flow. The modeling of exhibition props is realized through the expression of materials. Without proper material selection and process, it is difficult to optimize the form, color or meaning of exhibition tools. Is decided by the nature of the exhibition itself should walk on the leading edge, to play a leading role, the material of conference and exhibition development from the beginning of the reinforced concrete also slowly to innovation as the poetic romantic era now, in the development of technological innovation, exhibition props material or colorful, or artificial intelligence, has become more rich and broad [11]. Glass is a commonly used material to create exhibition space effect. After the 20th century, with the development of electronic technology, the coating technology of glass has also entered a period of rapid development. Coated glass has a high thermal insulation performance, can change the optical properties of glass, the use of coated glass technology is like a chameleon as rich appearance and color, in the exhibition design has been actively applied to meet the needs of various exhibitions. For example, the booth of an auto show is surrounded by coated glass neatly. The refraction

and reflection of the glass make the cars in the booth present a virtual speed state.

V. THE SPECIFIC WAY TO DEVELOP GREEN EXHIBITION UNDER THE DEMAND OF CIRCULAR ECONOMY

A. Constructing Green Exhibition Review System and Reference Standard

In order to truly promote the development of green exhibition and adapt to the requirements of circular economy, it is necessary to further implement the corresponding priority development policies and review systems required for the development of green exhibition, and establish a foundation for third-party certification work, which is also an important guide for enterprises and institutions to carry out green exhibition work. Green exhibition standards include technical standards, management standards, evaluation standards, etc., which should be an important basis in the green exhibition review process. Relevant units should strengthen the review of exhibition projects, establish and improve the review system of exhibition projects, and provide institutional support for the development of green exhibition.

B. Strengthen the Construction of Ecological Pavilions

The exhibition infrastructure of many cities in China has begun to take shape, but the quality of venues or supporting facilities in many areas has not yet met the requirements of green exhibitions, and the infrastructure construction of the exhibition industry should continue. On the one hand, in order to truly realize the green exhibition, not only more sites, but also advanced management systems and management teams are needed to improve the efficiency of the exhibition sites and other infrastructure. On the other hand, from the perspective of the organizer, the reuse of exhibition facilities and materials can greatly reduce the operating costs of exhibitors and exhibitions, and is also an important way for the development of green exhibitions.

C. Promote Green, Recyclable Exhibition Design Concepts

As the exhibition project is a temporary project, the enterprise investment is limited, construction in order to consider the cost, the material expenditure has been compressed. At the same time, the designer only attaches importance to modeling requirements, construction supervision in the lax control, resulting in the emergence of a large number of use of wood, plate, paint and other materials that do not conform to national regulations. Not only in the ideological and moral requirements of the exhibition enterprises, but also in accordance with the relevant laws and regulations at the same time from the market point of view, from the supply and demand relations, industry upgrading, consumer experience and other aspects, to promote the

exhibition enterprises to carry out industry innovation and concept innovation.

VI. CONCLUSION

"Green exhibition" is a kind of circular competitive mode which needs to be actively advocated and developed harmoniously with the environmental society, and it is quite urgent to establish a consummate green exhibition development plan in China's exhibition economy. Although China's exhibition economy has made great progress, the green exhibition concept and service system have just started, the environmental awareness of the whole industry needs to be popularized, and the relevant industrial chain needs to be improved. Green exhibition is an inevitable choice for the development of the exhibition industry, and gradually establish a green exhibition awareness, and set out to practice, so that green environmental protection implementation of the exhibition project operation and implementation of the whole process.

REFERENCES

- [1] Fang Thong, Zhang Songhua, "Ecological Interpretation of Convention and Exhibition Industry", *Journal of Southwest University for Nationalities*, pp. 223-226, December, 2014. (In Chinese)
- [2] Ma Jian, Li Liangyu, "Feasibility analysis of recycling technology of convention and Exhibition Tourism garbage", *Environmental sanitation engineering*, pp. 12-15, June, 2017. (In Chinese)
- [3] Dawson B K, Young L, Tu C, et Al. Co-innovation in networks of resources — A case study in the Chinese exhibition industry[J]. *Industrial Marketing Management*, 2014, 43(3):496-503.
- [4] Jones C, Li S N. The economic importance of meetings and conferences: A satellite account approach[J]. *Annals of Tourism Research*, 2015, 52:117-133.
- [5] Freestone R, James P. Exhibition to implementation: Introducing democratic planning for metropolitan Sydney 1948-51[J]. *Urban Policy and Research*, 2015, 33(1): 1-16.
- [6] BO Yan, "Research on the Application of New Concept of Green Design in Exhibition Industry", *Art hundred*, pp.95-97, February, 2015. (In Chinese)
- [7] He Jun, "The Way to Realize Green Exhibition Design in China", *People's Forum*, pp. 176-177, May, 2011. (In Chinese)
- [8] Adebayo P. Idowu, Emmanuel R. Adagunodo, et.al. Development of A Web based GIS Waste Disposal Management System for Nigeria[J]. *International Journal of Modern Education & Computer Science*, 2012, 3, 40-48.
- [9] Chen Yipping, "Several Problems and Solutions to Develop China's Green Convention and Exhibition Industry", *International Business Research*, pp. 106-109, April, 2016. (In Chinese)
- [10] Lei She Ping, Ma Hui. Quantitative Economic Analysis of the Industrial Structure of Coastal City of Shandong Province[J]. *International Journal of Modern Education & Computer Science*, 2012, 3, 9-14.
- [11] Asare Yaw Obeng, Peter L Mkhize. Impact of IS Strategy and Technological Innovation Strategic Alignment on Firm Performance[J]. *International Journal of Modern Education & Computer Science*, 2017, 8, 68-84.