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Construction of Environmental Protection Management System Based on Low-carbon Environmental Protection Policy

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Abstract: With the rapid growth of economy, energy consumption is increasing, and environmental pollution is becoming more and more serious. How to effectively control environmental degradation has become a global topic of common concern. The low-carbon environmental protection policy provides a theoretical basis for the environmental protection management system. From the starting point of building the enterprise green management system, this paper points out the necessity and feasibility of analyzing the environmental protection system, as well as the technical route and objectives required for establishing the system, and puts forward corresponding suggestions, hoping to make better contributions to China's economic growth in practice. It also designs the environmental protection management system, tests its functional effects, and the results show that, The security of the environmental protection management system based on the low-carbon environmental protection policy is generally high, which can well protect the user's data and effectively protect the environmental data under the cloud environment, thus accelerating the construction process of the healthy and sustainable growth of the ecological environment, and ultimately achieving the goal of harmonious coexistence between human beings and nature.

1. Introduction

With the rapid growth of China's economy, people's living standards have been significantly improved, but also brought a series of environmental problems. Influenced by global warming,

energy shortage and other factors [1, 2]. How to better protect the ecological environment has become one of the serious challenges that countries around the world face and face. Therefore, it is of great significance to establish a scientific and reasonable management system that combines low-carbon environmental protection policy management requirements with the concept of sustainable growth to solve the various pressures on environmental protection caused by China's rapid economic growth, so as to achieve harmonious, stable and healthy social growth [3, 4].

In the research of tourism management system in a low-carbon environment, foreign scholars have had more in-depth, systematic and professional characteristics, and the system is relatively complete. At present, this aspect is still in its infancy in China. First of all, from the theoretical point of view, after a relatively comprehensive analysis of tourism management policies and systems in China, it is found that the lack of scientific, reasonable, effective and unified norms has led to a certain negative impact on environmental protection. Secondly, from the practical level, many problems have been exposed in the growth of tourism in a low-carbon environment [5, 6]. Chinese scholars have also begun to conduct in-depth discussions on the construction and planning of low carbon cities in China. Some scholars put forward corresponding countermeasures and suggestions from the deficiencies in the environmental protection management system. Some scholars believe that the goal of green city growth can be achieved by establishing a complete, scientific and reasonable management mechanism [7, 8]. Therefore, based on the low-carbon environmental protection policy, this paper designs the environmental protection management system.

After analyzing and studying the low-carbon environmental protection policy, the theory of environmental protection management system and the related concepts of management information system, this paper puts forward the deficiencies in the construction and operation of China at the current stage based on low-carbon emissions, and proposes solutions to these deficiencies, with a view to providing reference for China in this field in the future, so as to promote the coordinated, healthy and rapid growth of economy and environment.

2. Discussion on Environmental Protection Management System Based on Low-carbon Environmental Protection Policy

2.1. Importance of Environmental Protection

Environmental protection is the basis for human survival, and also determines economic growth and social progress to a certain extent. As global environmental problems become more and more serious, energy crisis, ecological damage and other global challenges [9, 10]. We must take measures to protect the earth's ecological environment, reduce the consumption of natural resources and achieve a sustainable growth model on this basis. At the same time, we must strengthen the construction of the environmental management system and improve relevant laws and regulations to ensure the normal operation of the environmental management system. Finally, we need to enhance the public's awareness of environmental protection, Let people realize that green travel and civilized life are inseparable and necessary conditions for human survival and growth. In the process of the growth of human society, economic growth is inevitable, but it also brings about environmental pollution. Due to people's insufficient awareness of environmental protection and lack of legal awareness. Therefore, in order to solve these problems, we must reduce pollutant emissions at the source and strengthen environmental protection education and publicity to improve the awareness of the whole society on the importance of protecting the ecological environment. Only in this way can we provide a strong guarantee for China's ecological and cultural construction with the purpose of forming a good civilization, a healthy lifestyle and a sustainable growth model, and achieve harmonious coexistence and common progress between man and nature [11, 12]. It not only includes the energy consumption and pollutant reduction in the process of human survival and

growth, but also takes into account the contradiction and balance between the protection of ecological environment and resources and sustainable use, so as to achieve comprehensive governance and coordinated growth under the goal of double harvest of economic benefits and ecological value. When dealing with environmental protection, it is necessary to follow the requirements of relevant laws and regulations and the principles of environmental protection, It is of great significance to ensure that the environmental management system, policies and measures can be effectively implemented and achieve the desired results [13, 14].

2.2. Low Carbon Environmental Protection Policy

Low carbon environmental protection policy refers to a series of measures and plans implemented by the country to achieve sustainable economic growth, protect and improve the ecological environment. Through the improvement of energy structure, production mode and environmental protection technology, etc. In order to achieve the goal of reducing greenhouse gas emissions, and provide a good operating environment for enterprises to reduce costs [15, 16]. What plays an important role in China's national economic growth is that the resource-based industry has brought a lot of serious pollution problems and ecological damage under the high energy consumption economic growth model. Therefore, the country has formulated a series of energy conservation and emission reduction plans to achieve the strategic requirements of sustainable growth. Low carbon environmental protection policy mainly refers to the control, limitation and reduction of pollution load through the emission of pollutants in a certain area. In the field of environmental protection, it mainly means to promote the coordination and unity of economic and social growth and environmental protection by taking technological progress as the main means, while the construction of ecological civilization provides safeguard measures and environment-friendly concept for the realization of ecological environment sustainability. Low carbon environmental protection is to control the emission and concentration of pollutants in the production process with environmental protection as the core. Therefore, it is necessary to formulate corresponding environmental protection management system to let people understand the close connection, mutual influence and interdependence between enterprise production and life. At the same time, it is also necessary to pay attention to improving the enthusiasm and initiative of the people to participate in social activities to ensure the maximum effect of China's low-carbon environmental protection policies. Finally, it is necessary to constantly improve relevant laws, regulations and rules and strictly implement them. The execution process is shown in Figure 1.

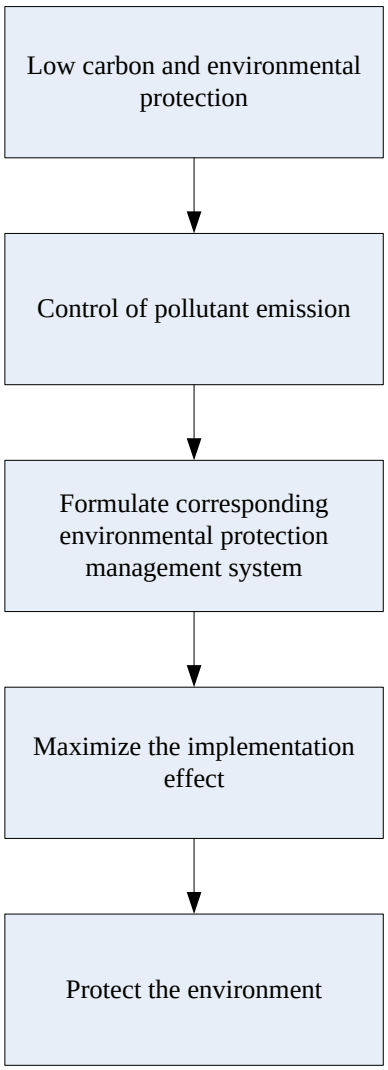

Figure 1. Low carbon environmental protection process

2.3. Data Mining Algorithm

Data mining is a new type of information processing mode based on computers and emerging with the growth of new technologies. It is mainly realized by two methods. One is to establish a group of known or non-existent relationships in the existing database, and model them according to these relationships. Through analyzing a large amount of information, we can obtain useful knowledge, so as to obtain valuable and meaningful learning ability, high predictability, good communication with other people and other characteristics, and can find hidden unknowns or do not need new ideas. It can study the contact ways and rules between objects from multiple directions [17, 18]. Establish a data aggregation function model according to different classifications, and then test each sample in the original sample to determine what characteristics and attributes it may have, and finally find out the law of the magnitude of the correlation between the hidden problems and variables. The second is to import the model into the database to find which attributes and feature points (such as noise, temperature, etc.) are included in the potential data, as well as the possible contact information and changes between them. Figure 2 is the flow chart of the data mining algorithm.

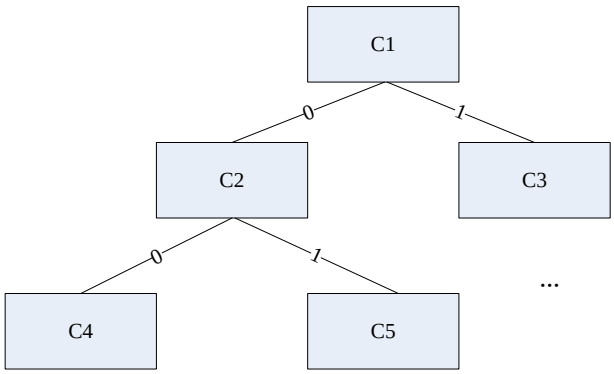

Figure 2. Data mining algorithm process

Data mining algorithms are mainly used to effectively classify and filter massive information, and establish corresponding models according to these different attributes, so as to deal with all decision-making problems contained in the target system. In this process, we can find that, considering the relationship between different levels to a certain extent, we need to convert these complex, abstract and difficult to quantify features into specific and highly observable data sets with universal application value and representative data sets. Set itemset 1=i, i,.., in}, where each element i is an item. Given the dataset D={t..., tn}, transaction ti has a unique identifier TID and is a subset of itemset I, that is, tI.

$$Sup(X \Rightarrow Y) = Sup(XUY) = P(D) \tag{1}$$

$$Conf(X \Rightarrow Y) = Sup(XUY)\_Sup(x) = P(Y \mid X) = P(X \cup Y)P(X) \tag{2}$$

For itemset I and dataset D, association rules that meet the minimum support (min_sup) and minimum confidence (min_conf) are called strong association rules, and vice versa.

3. Experimental process of Environmental Protection Management System Based on Low-carbon Environmental Protection Policy

3.1. Environmental Protection Management System Based on Low-carbon Environmental Protection Policy

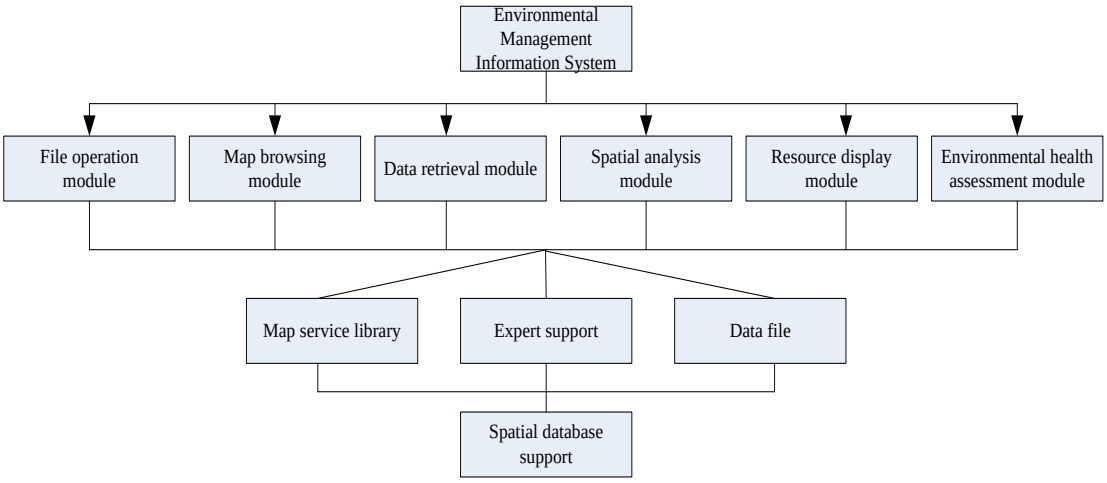

Figure 3. Environmental protection management system based on low-carbon environmental protection policy

Under the low-carbon environmental protection policy, the construction of environmental management system is very important, and the platform and standardization of environmental protection information management must be realized. First of all, collect the existing data, and analyze the data to know what factors affect the system operation. Second, understand the allocation of related personnel, equipment and other resources, and whether there are violations of regulations, which will have a certain effect on the system. The system (as shown in Figure 3) can collect, analyze and process the required information, and accurately evaluate the emission, concentration and distribution of relevant pollution sources through the data model. At the same time, it can also formulate corresponding environmental protection management systems, policies and regulations based on the actual economic growth status, energy structure characteristics and other factors in different regions, In order to provide effective guarantee for environmental protection management, we should also take into account the possible emergencies and emergencies during the implementation of low-carbon environmental protection policies, and formulate corresponding coping strategies and emergency countermeasures to ensure that the environmental management information system can operate stably for a long time.

3.2. Functional Test of Environmental Protection Management System Based on Low-carbon Environmental Protection Policy

When building an environmental protection management system based on low-carbon environmental protection policies, simulation operation is required to determine whether the system can operate normally. During the test, the data and information of system function, performance and environmental factors should be collected first, and then the basic characteristics of the software should be analyzed through the data obtained. Finally, the obtained parameters are input into the test interface and the corresponding performance indicators and usage methods are realized according to their characteristics, which are displayed on the interface, and then detailed evaluation results are obtained from the database table.

4. Experimental Analysis of Environmental Protection Management System Based on Low-carbon Environmental Protection Policy

4.1. Functional Test Analysis of Environmental Protection Management System Based on Low-carbon Environmental Protection Policy

Table 1 shows the function test data of the environmental protection management system.

Table 1. Environmental protection management test data

Test times	Protect encryption time(s)	Data Mining Rule algorithm Time(s)	Manage the system security rate(%)	Using a mathematical model
1	15	3	89	Siding-to-siding block
2	24	2	94	Binary tree
3	17	4	93	Binary tree
4	21	3	90	Function mapping
5	19	5	91	Siding-to-siding block

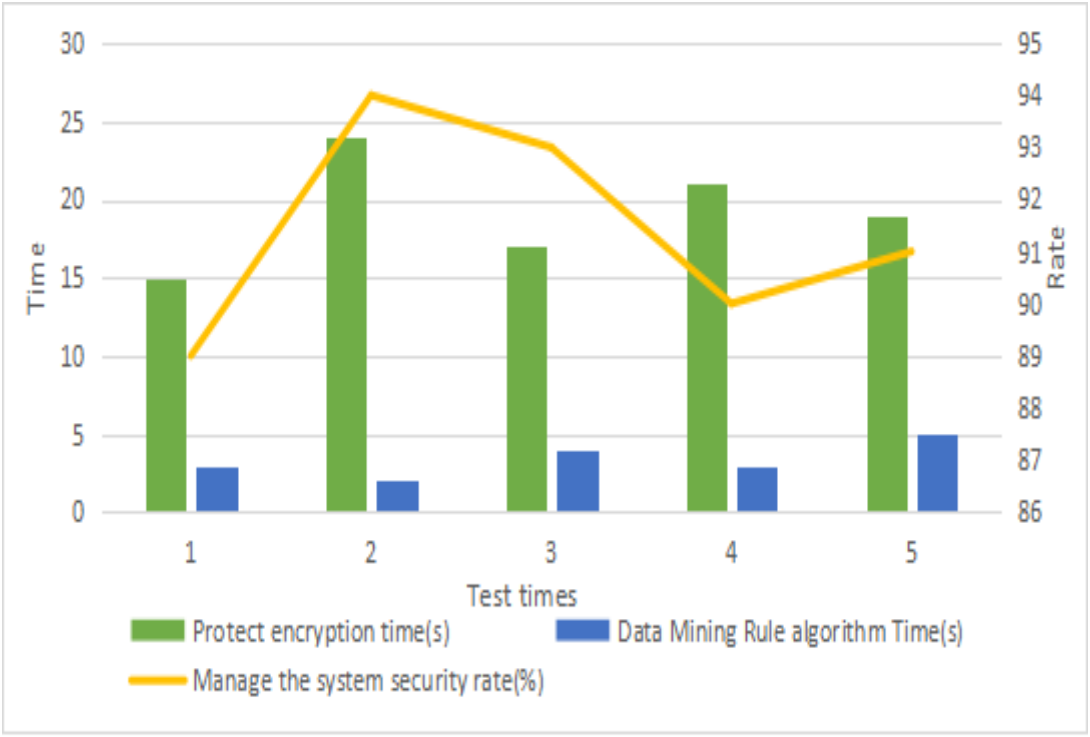

Figure 4. Function test of environmental protection management system based on low-carbon environmental protection policy

The system can realize automatic data processing, display various information in the original database in tabular form through computer technology, and provide effective and timely information recording and dynamic update mechanism to managers by using computer network technology, multimedia communication and other methods. In addition, the system also adopts a strategy of combining various methods to analyze and study the environmental management system, So as to achieve the purpose of improving work efficiency and reducing costs. It can be seen from Figure 4 that the security of the environmental protection management system based on the low-carbon environmental protection policy is generally high, which can well protect user data and effectively protect the environmental data in the cloud environment.

5. Conclusion

With the rapid growth of China's economy and the continuous improvement of people's living standards, energy consumption is also gradually increasing, especially non renewable resources such as coal and oil. Therefore, how to effectively protect the environment has become an important issue facing the current society. This paper takes low-carbon environmental protection policies as the research object. First, it introduces that low-carbon environmental protection management and management system plays a positive role in achieving sustainable growth strategies and promoting human health relations. Second, it analyzes the necessity and feasibility of building a green information system for Chinese enterprises based on energy conservation and emission reduction policies. Finally, it combines the actual situation, This paper puts forward how to establish a set of environmental management information system that conforms to China's national conditions and can effectively safeguard the public interest in the global scope, so as to realize the balanced growth among social benefits, economic benefits and ecological values.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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