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Design and Implementation of Environmental Protection Publicity Based on Green Energy Effect

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Abstract: The concept of environmental protection(EP) propaganda has developed in a dynamic and active way, reflecting the deepening awareness of EP education. As the environmental problems intensify, it is urgent to promote and popularize the concept of EP. Therefore, this paper designs an EP propaganda website, where environmental news and propaganda announcements can be published. This paper takes a city's application of this website to promote the concept of EP to the city and do a good job of energy conservation and EP as an example. Comparing the energy consumption before and after the green energy(GE) planning, it is found that the city saves 14.905 million kgee after the EP propaganda work, which shows that the EP propaganda website improves the citizens' awareness of energy conservation, promotes the development of GE in the city, and provides guarantee for the realization of green economy and green life.

1. Introduction

With the promotion of EP concept, our economy and ecology can maintain a balance. Based on this, EP publicity and education is deeply rooted in people's hearts. However, the development of environmental education in China is not in an isolated and closed mechanism and form, but is based on communication, connection and openness, and environmental education has been connected and interconnected at different stages of history, showing a spiral of overall development, presenting the form of survival and environment education, environmental education, SD education and ecological civilization education.

Research on environmental education has made good progress. In today's society, with the rapid increase in material wealth, people's demand for a good quality of life is also increasing, and the environmental rights to live in a beautiful environment has become a common pursuit of all human beings in society. However, the serious situation of environmental pollution in air, rivers, and soil, as well as the management dilemma of government control failure, market regulation failure, and

public voluntary failure in environmental management practice, show that it is impossible to fundamentally improve the quality of the environment by any single entity. Only through cooperation and collaboration among government, enterprises, citizens, environmental NGOs and other parties can we achieve the Pareto optimum of public ecological benefits and the ideal goal of "good environmental governance" [1-2]. In terms of environmental participation in governance, some scholars believe that the participation of environmental social organizations is an important way to fundamentally improve environmental quality, and although the introduction of public participation increases the time cost and expense of the environmental impact assessment process of construction projects, it is undeniable that public participation should become an important part of environmental impact assessment, and the role of the public in the process of environmental monitoring and inspection should be given full play through supervision, reporting, and environmental public interest litigation. reporting, environmental public interest litigation, etc., can effectively make up for the lack of public implementation of environmental laws [3-4]. Environmental propaganda research has been quite effective, and in the future, we should also be committed to do a good job of environmental propaganda in order to protect our home.

This paper firstly introduces the concept of GE and proposes the concept of sustainable economic and social development under the GE effect, then designs the EP publicity website, then analyzes the energy consumption rate of a city applying the publicity website, verifies that the application of the EP publicity website can achieve certain energy-saving effect, and then proposes the EP publicity work that should be done under the GE effect.

2. GE Effect

2.1. The Connotation of GE

GE is an environmentally friendly energy source that can be directly applied in manufacturing processes and life and has low pollution and emission characteristics. It is also known as new energy, renewable energy or clean energy [5]. The use of advanced green technologies enables the better development and application of GE, and the replacement of fossil energy, which is facing resource constraints and causing ecological damage, with GE that is recyclable and clean has long become a unanimous concept worldwide and is considered an effective solution to climate change and the energy crisis [6].

2.2. GE Sustainability

The theory of sustainable energy development, with sustainability and synergy as its cornerstones, is a theory that enables a secure supply of global energy needs without jeopardizing the survival of future generations and promotes international cooperation in the energy sector. Sustainable development(SD) provides a positive impetus for economic growth, eliminates lagging, energy-intensive and environmentally damaging traditional backward industries, and promotes the advancement of new technological industries [7]. This theory aims at the coordinated development of economy, environment, and ecology, focuses on environmental improvement, and with the help of government policy support and technological enhancement, conserves the use of resources and enhances the efficiency of energy use, which makes the economy achieve green growth, ensures the security of energy supply, and realizes high-quality social development. The most important concept of current SD theory is the construction of ecological civilization, economic development model that reduces high carbon energy consumption, etc. The world needs a harmonious coexistence between human and nature, and the world environment as a whole is upgraded to improve the degree of protection [8]. Global SD can be transformed from a blueprint to a reality

when the world's demands to ecology match the world's payments to ecology, when global attention is paid to the negative impact of production activities on the current environment, and when all human beings consider the development of other parts of the globe and even the future of the entire world for their own benefit [9].

GE SD content is formed by the continuous expansion of SD theory, focusing on three elements: first, with the protection of ecological climate, energy consumption should not lead to the emission of pollutants beyond the range of the environment can bear; second, with the sustainable economic development to match, the development and application of energy should not only meet the needs of economic upgrading, but also the profits and costs should be in a relatively stable Third, and the direction of social development, the exploitation of energy should be aimed at meeting the equitable interests of mankind. GE SD means that the level of energy use should be improved to match the current and future needs of economic advancement, and all ecological problems arising from energy use should be properly addressed to promote continuous improvement of the ecological environment [10-11]. GE SD is aimed at examining the status of energy-related industries, formulating energy development plans, meeting the energy needs of society, and thus achieving the goal of greening energy development [12].

The GE cooperation index (ECI) is calculated as follows.

$$ECI_i = IIT \times RECG_i \tag{1}$$

$$RECG_i = ECG_i / ECG_j \tag{2}$$

Where IIT indicates the trade index, which reflects the extent of two-way trade in industry i. ECGi symbolizes the energy consumed per unit of GDP in country i, ECGj symbolizes the energy consumed per unit of GDP in the world, and RECGi is the energy efficiency of country i [13].

3. Design of EP Propaganda Based on the GE Effect

3.1. Requirements for the Design of EP Propaganda Website

(1) Demand analysis of EP news release

At present, the environmental pollution problem is getting more and more attention. After analyzing and examining the data related to the EP network, people have established several important functions to design the EP news propaganda website with.

System administrator: the administrator is the system steward, responsible for the relationship of the entire system, mainly news category management, information management, site information management, survey management, etc.

News category management: In order to better maintain environmental news information, the news is specially classified for operation, such as dividing environmental news into historical news, current affairs news, EP industry, etc., which is convenient for users to partition and browse [14].

Announcement information management: used to record EP propaganda issued by the administrator, or promulgate EP policies, etc.

Questionnaire management: release questionnaire information to keep abreast of users' needs in terms of EP news.

(2) Economic needs

The economic feasibility of the EP propaganda website system is to compare the economic benefits generated by this website product after it is put into use with the expected investment in the early stage, calculate the expenditure and income ratio, as well as the cost of post-maintenance, to check whether it is appropriate, and also to pay attention to whether the website product can bring

reliable financial results to users. The time of work, improve the efficiency of work, and later can be simple and easy to operate and manage this product [15-16]. The website system is economically independent and completely feasible, the development process does not require a large amount of money, and only requires its own computer and related software to implement, which will be able to save a large amount of money [17].

(3) Technical requirements

According to the objectives achieved by the system to measure whether the next technology allows to complete the design, it is generally possible to consider and analyze the hardware and software requirements and environmental conditions of the functions, as well as other aspects such as the level of the personnel using them. The relevant aspects of software, MyEclipse and SQL server are very mature, and the security and reliability aspects are in line with the website design requirements [18].

3.2. EP Propaganda Website Data Management Design

(1) News information table data

Table 1. News information

Alias	Data Type	Data Size
News ID	Int	10
News Title	Varchar	100
News Content	Varchar	4500
Publish Time	Varchar	35
Category ID	Int	8

As shown in Table 1 is the type of news information data of the EP propaganda website, in the EP news database, it is necessary to count the news ID, news title, news content, news release time, and news category ID and other related EP news.

(2) Announcement information table data

Table 2. Announcement propaganda information

Alias	Data Type	Data Size
Number	Int	10
Publicity Title	Varchar	200
Announcement content	Varchar	7000
Publish Time	Varchar	15

As shown in Table 2 is the EP publicity website announcement information data type, in the EP announcement information database, the EP announcement number, announcement publicity title, announcement content and announcement release time and other related EP publicity announcements need to be counted.

4. EP Propaganda Website Application Implementation under the GE Effect

4.1. EP Propaganda Role Realization

GE planning in ecological urban areas is an effective way to solve the problem of energy shortage in the process of urbanization in China, but there are many problems in the process of implementing energy planning. On the one hand, it is due to the late research on energy planning theory and few engineering examples in China, resulting in uneven planning methods and depth. On the other hand, the lack of research on GE planning in China has led to a lack of unified and recognized standards and models for the preparation of GE planning programs by various regions

and institutions.

A city promotes an environmental awareness website to promote the concept of energy conservation and EP to the public. As shown in Table 3, the city's energy consumption for cooling, heating, hot water, and power supply before and after the energy conservation and EP promotion. The city saved 14.905 million kgee after the EP promotion.

Table 3. Energy savings (million)

	Annual load (million kWh)	Energy consumption before promotion	Energy consumption after promotion	Energy saving (million kgee)
Cooling	6348.2	2136.4	1833.5	302.9
Heating	3761.7	573.8	279.3	294.5
Hot water supply	824.5	391.7	210.5	181.2
Electricity supply	6937.4	4054.6	3342.7	711.9
Total	/	/	/	1490.5

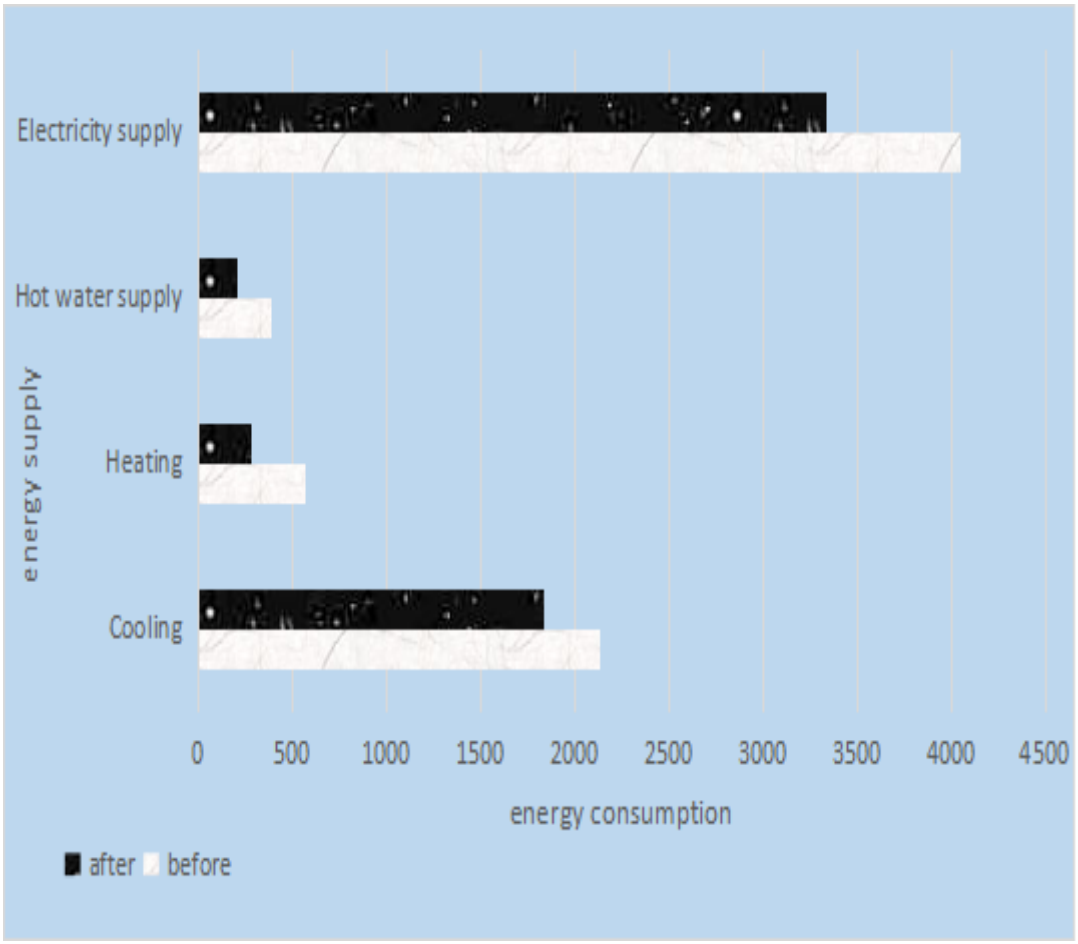

Figure 1. Comparison of energy use before and after EP promotion

As shown in Figure 1, the city's use of each energy source before and after the promotion of the EP concept has resulted in the greatest reduction in the amount of energy supplied to the city after the promotion, raising the awareness of the public to save electricity.

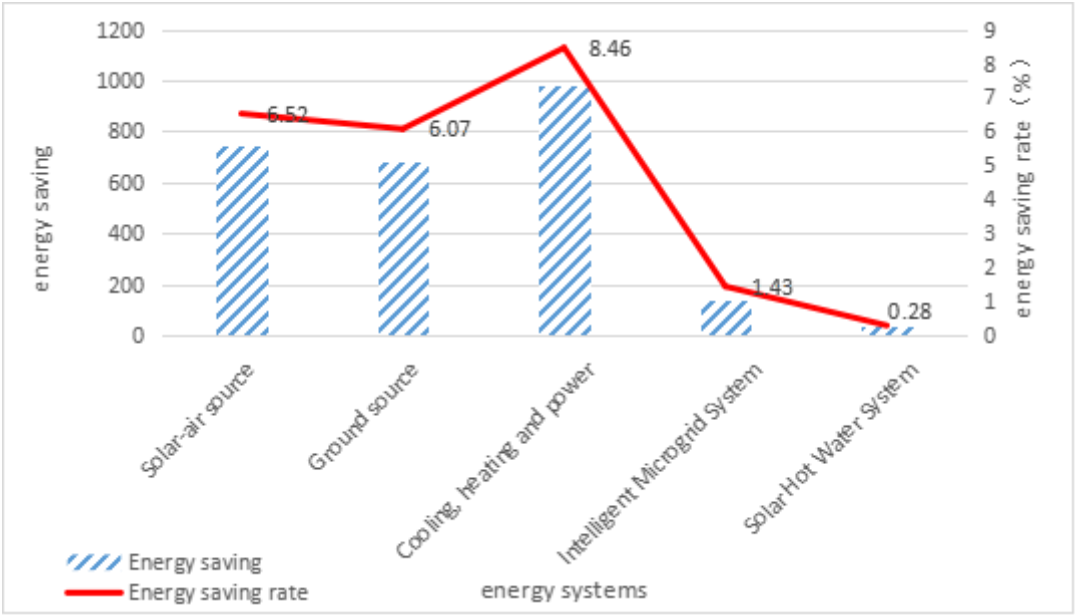

Figure 2. Energy saving rate of GE planning in ecological urban areas

The energy saving and energy saving rate of GE planning in the Eco-city area can be obtained from the baseline energy consumption before planning and the energy consumption after planning. The energy saving rate of GE planning in ecological urban area is shown in Figure 2. The energy saving rate of solar-air source heat pump composite hot water system is 6.52%, the energy saving rate of ground source heat pump system is 6.07%, and the energy saving rate of cooling, heating and power trigeneration system is 8.46%, and the energy saving contribution is mainly contributed by these three energy systems.

4.2. EP under the GE Effect

(1) Strengthen the establishment of environmental online monitoring system

Strengthen the construction of real-time online monitoring system for key state-controlled pollution source enterprises, realize online monitoring of pollution sources and online processing of environmental violation cases, and conduct real-time monitoring of their emission status. Further improve the main drinking water sources, major watershed cross-sections, urban sewage treatment plant water quality automatic monitoring system and automatic monitoring system of the atmosphere, to achieve networking, integration and sharing of monitoring information at the provincial, municipal and county levels.

(2) Strengthen the governance of industrial pollution sources

Strengthen the deep treatment of industrial enterprises' production wastewater and adopt advanced pollution control technology. For example, the coking water biological denitrification treatment is transformed, using advanced A-O biological denitrification process, biological bacteria culture, remove the nitrogen in coking water; the coking phenol cyanide wastewater treatment is transformed, using SH-A energy-saving enhanced biological denitrification and decarbonization process, the existing phenol cyanide wastewater deep treatment; the original sewage treatment plant is transformed, replace the existing sewage lifting pumping station capacity and sewage The new sewage treatment capacity and depth treatment capacity will be added.

(3) Sound management means of EP

The organizational system of EP should be improved, and the specific responsibilities of each level and department should be clarified, in addition to assigning responsibilities and giving

appropriate incentives to increase the enthusiasm of each department. Efforts should be made to guide the public to actively participate in EP, supervise the implementation of EP work, provide timely feedback on the operation of EP work, and promote the maintenance of public environment and SD.

5. Conclusion

The environment that people depend on is being destroyed and more people need to participate in EP and ecological management. In this paper, we designed a website to promote EP to make people pay more attention to environmental issues, so that they can always pay attention to EP and save water and electricity in their daily life. In this paper, we analyze the actual application of the website and find that the promotion of the website does play a certain energy-saving effect and realize the GE utilization.

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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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