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Ecological Environmental Protection under the Concept of Integration of Green and Energy Effect

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Abstract: China is currently in a period of rapid economic development and transition, with energy consumption growing rapidly and energy supply capacity far exceeding demand capacity. In this context, a combination of green and energy effect concepts is needed for a holistic solution. In this paper, through the rational use of traditional energy technology, environmental protection treatment and the research and application of new energy technology. The results of the experiment show that when asked "who do you think has the responsibility to protect the environment", 67% of the respondents said the government is responsible for environmental protection; 22% of the respondents would choose "Only 11% of the respondents said that "environmental protection is everyone's responsibility". It can be seen that most farmers put their responsibility for environmental protection entirely on the government, and do not realize that it is everyone's responsibility to protect the environment. In this context, it is necessary to strengthen farmers' ecological education, improve the ecological and environmental system, enhance farmers' awareness of social responsibility, and vigorously develop the circular economy to continuously strengthen the concept of green environmental protection to achieve the sustainable development of China's energy and environment.

1. Introduction

In the background of the current era, China is mainly based on traditional energy sources at this stage, which requires the rational use of traditional energy sources. At the same time, through the research and application of new energy technologies, energy consumption can also be reduced and energy supply capacity can be improved. Traditional energy sources mainly include petroleum energy and natural gas energy, which account for most of the total energy in China. Along with the continuous development of China's socio-economic level, the continuous consumption of traditional energy sources has also greatly increased the energy supply capacity in recent years, which has also

led to the rapid expansion of China's economic scale. Along with the continuous development of China's economic level, all kinds of energy sources have been used continuously. At the same time, the environmental problems caused by the irrational use of energy are gradually coming to the fore.

Climate change has caused ecological, economic and social disasters, which not only makes countries re-examine their environmental protection issues, but also makes consumers pay more attention to the environment and encourage green consumption behavior. Lin S T confirmatory factor analysis and structural equation model were used to verify the scale and structural model respectively [1].MARLENA proposed The commitment to renewable energy can be clearly seen in American companies and in some countries that aim to be 100% green by different deadlines [2]. Due to the limitations of traditional energy sources by their own characteristics, the current energy use is less efficient and pollution problems are becoming more prominent. In the current situation not only the traditional energy sources need to be reasonably adjusted to match in order to achieve the optimization of energy structure and green development.

With the continuous promotion of China's economic development and social transformation process, as well as the influence of international and domestic situations and other factors, China's energy demand is also increasing. There is also a need for a comprehensive analysis and assessment of energy issues and energy effects to achieve efficient utilization. At the same time, traditional and green energy sources need to be combined to achieve overall optimal control.

2. Ecological Environmental Protection under the Concept of Integrating Green and Energy Effect

2.1. Combining Energy Structure

(1) Green energy

Green energy mainly includes solar energy, wind energy, water energy and so on. In solar power generation, with the continuous improvement of solar energy technology and technology level, as well as scientific research and reasonable planning and utilization and promotion and application, the cost of solar power generation has dropped significantly [3, 4]. And with the rapid development of technology, the efficiency of solar power generation has increased significantly, and has become the most dominant and effective way of solar power generation at present. In terms of hydro energy, China has abundant hydro energy resources that can be widely used in various aspects of life. With the rapid growth generated by the development of China's socio-economic scale, the demand for water and hydro energy resources is gradually increasing. With the upgrading of technology, China is also gradually increasing the exploitation of hydro energy resources. Green energy includes a variety of clean energy sources such as hydropower, hydroelectric power, nuclear power, and solar power as the main forms and means [5]. However, with the development of time, the influence of various factors and the level of technology upgraded, the efficiency of green energy utilization has significantly decreased in recent years, and it is difficult for clean electricity to meet the demand generated by China's social and economic progress.

(2) Combination of traditional energy and green energy

In recent years, as global environmental protection has been strengthened, China's energy supply capacity has far exceeded the needs of countries around the world [6, 7]. Moreover, due to the rapid development of new economic industries and new technologies in China, as well as the increasing population density, the problem of energy supply imbalance has been gradually highlighted [8]. Therefore, a comprehensive analysis of the current energy problems and development directions faced by China will play a key role in the overall energy structure reform. In the current context, it is necessary to make full use of traditional and green energy sources. For the continuous development of traditional energy and the improvement of people's living standard, the traditional

energy should also be adjusted in an optimal way. In the new era, with the rapid development of new technologies, the efficiency of utilization has been significantly improved, and this requires China to give full play to its own advantages and use scientific and rational ways to achieve reasonable regulation of oil and natural gas resources. This will not only give full play to their role but also be very beneficial for ecological protection and development [9, 10].

As an environmental indicator, carbon dioxide emissions are calculated by the formula

$$RV = \sum_{j=1}^{6} RV_j = \sum_{j=1}^{6} R_j \times VG_j \times VV_j \times VPG_j \times 3.67 \quad (1)$$

In the above equation, RV represents the total CO_2 emission; j represents the energy type, mainly coal, coke, kerosene, gasoline, natural gas, diesel, and fuel oil; R_j represents the total consumption of the jth energy source in each province; VG_j represents the heating value of the jth energy source; VV_j represents the carbon content; and VPG_j represents the oxidation factor of the jth energy source [11].

Total cement CO_2 emissions.

$$VV = W \times RG \quad (2)$$

In the above equation, VV denotes the total amount of carbon dioxide emissions in cement, W denotes the total amount of cement production, and RG denotes the emission factor of carbon dioxide produced by cement [12, 13].

2.2. Green Environmental Protection Concept

The green concept has an important practical significance in China, which is mainly reflected in the impact it has on economic development, which in turn has achieved the improvement of China's economic level and promoted the development of the green concept in China. In the current stage of China's economic development, the rapid development of the economy has led to an increasing consumption of resources and environmental pollution due to environmental problems, and people are gradually beginning to pay attention to environmental protection issues. However, the rapid economic development in China has led to the emergence of environmental problems that have become increasingly prominent and have triggered people's attention [14]. In today's conditions, the country has begun to pay attention to environmental issues on the corresponding strategic arrangements. For some pollution problems caused by unreasonable use of energy and protection of the environment, they can be dealt with by formulating corresponding laws and regulations and strengthening supervision.

(1) Making relevant laws and regulations

In the process of ecological environmental protection in China, there is a great pressure on ecological environmental protection. People need to restrain the problems of resource consumption, energy waste, and environmental pollution through laws and regulations. In the current era, China should also make relevant laws and regulations to restrain some problems in resource consumption and environmental pollution, so as to guarantee the ecological environment to achieve healthy development [15, 16]. In the current ecological environmental protection, people should pay attention to ecological environmental protection and to achieve green environmental development. China wants to build a well-off society in all aspects, and the requirements for some ecological environment aspects are getting higher and higher. To achieve green environmental development, it

is necessary to start from ecological environmental protection, increase the work on ecological environmental protection, and establish a green environmental protection mechanism. To do this, China needs to start with laws and regulations to restrain the problems of unreasonable resource consumption, damage to ecological environment and causing air pollution in ecological environmental protection to avoid these pollution problems from affecting people's vital interests and healthy development. At the same time, it is also necessary to restrain resource consumption and unreasonable resource emissions in ecological environmental protection by making relevant laws and regulations. China also needs to take into account the actual situation in China and the psychological role of the residents when making relevant laws and regulations to restrain from laws and regulations. Only when the combination of the real situation and the psychological needs of the residents is fully considered and the real conditions are met can we ensure that sustainable development is achieved in accordance with the real requirements.

(2) Strengthen supervision

In view of the many problems in ecological protection caused by the unreasonable use of energy, the state also needs to strengthen the regulation of energy so that it can play its proper role. For example, China has started to develop a circular economy, which plays a key role in improving the country's economic health. In the circular economy, there is a certain degree of waste of resources, which increases resource consumption and causes environmental stimulation, so the Chinese government must strengthen the regulation of environmental pollution in the economic construction sector. By strengthening the regulation, the waste and pollution of resources can be reduced, thus protecting the ecological environment of China and realizing the great significance of ecological environmental protection in China. Therefore, the Chinese government can further strengthen the regulation to ensure that the goal of green development of the economy and society is really achieved [17, 18]. For example, under the green development concept, there are many requirements in terms of recovery and recycling of resources. Only when combined with the green concept as the basis, can we realize the importance on ecological environmental protection in China.

3. Experimental Design of Ecological Environmental Protection under the Concept of Integration of Green Environment and Energy Effect

In order to have a comprehensive understanding of people's awareness of ecological and environmental protection, this paper conducted a questionnaire survey for 850 villagers, which mainly included the basic information of the respondents, the types of domestic waste and its treatment, the cognition of the main body responsible for environmental protection, the classification method of waste treatment, etc. A total of 850 questionnaires were distributed, of which 800 were actually collected and 800 were valid. The basic situation of the survey is as follows.

Table 1. Basic situation of survey respondents

	Variables	Number of people	Percentage of%
Gender	Male	390	48.75
	Female	410	51.25
Age	18-28	220	27.5
	29-40	230	28.75
	41-65	240	30
	66 or more	110	13.75

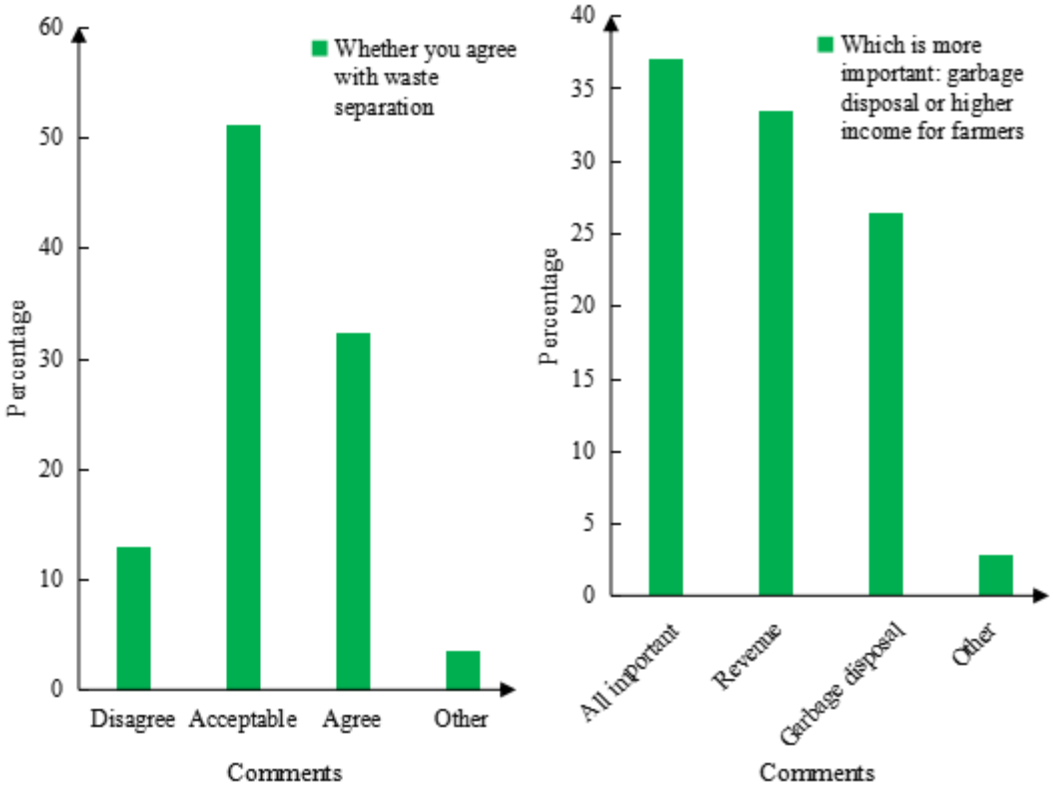
As can be seen from Table 1, the number of males in this survey is 390, accounting for 48.75%; the number of females is 410, accounting for 51.25%, and the total number of females is slightly

higher than the total number of males. Secondly, in the age distribution, the number of people between 18-28 years old is 220, accounting for 27.5%; the number of people between 29-40 years old is 230, accounting for 28.75%; the number of people between 41-65 years old is 240, accounting for 30%; the number of people over 66 years old is 110, accounting for 13.75%.

4. Experimental Analysis of Ecological Environmental Protection under the Concept of Integrating Green and Energy Effect

4.1. Analysis of the Current Situation of Ecological and Environmental Protection Awareness

According to the survey, among 800 farmers, 32.35% of them said they were in favor of waste separation, but they might not be bound to do it due to objective or subjective factors; 51.18% of them said they could accept it for a good living environment despite the trouble. Secondly, in the survey of "which is more important, garbage disposal or raising farmers' income" (Figure 1b), 37.06% said both are important; 33.53% said they are more concerned about farmers' income, 26.47% said they are more concerned about garbage disposal. 33.53% said they were more concerned about farmers' income, while 26.47% said they were more concerned about garbage disposal and returning our beautiful environment. In addition, in the survey of "what do you think of the current environmental pollution", most farmers are aware that there are more environmental pollution problems. It can be seen that the ecological awareness of farmers has been improved, and they are aware of some problems facing the development of rural ecological environment, but there are still some farmers who lack ecological aesthetic awareness, ecological scientific awareness and ecological responsibility awareness.



(a) Whether they favor waste separation (b) Which is more important, waste disposal or farmers' income improvement

Figure 1. Current situation of ecological environmental protection

4.2. Relative Lack of Ecological Science Awareness

In the questionnaire survey, when asked "How do you dispose of used pesticide bottles or other containers?" (Figure 2), 45.88% of farmers chose to "throw them into the village garbage can together with other garbage", 22.35% chose to throw them directly in the field, 21.18% chose to "throw them in the open area or on the roadside", and 7.65% of farmers chose to throw them in other 7.65% of farmers chose other (threw into the hazardous materials bin), and even 2.94% of farmers chose to wash and reuse. The survey results show that some farmers have very little ecological knowledge and dispose of pesticide bottles and other hazardous waste in an arbitrary and Unscientific manner.

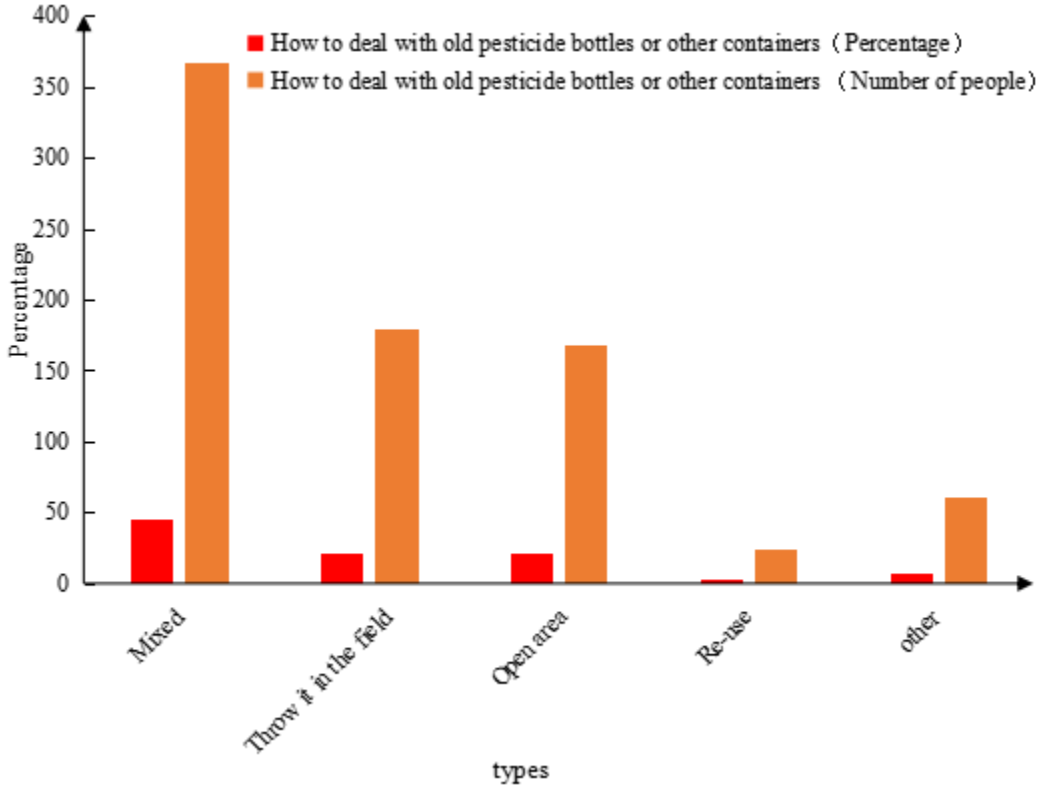


Figure 2. How to dispose of old pesticide bottles or other containers

4.3. Unscientific Agricultural Farming Methods.

The survey shows that in order to increase crop yields, farmers will use a large amount of pesticides and fertilizers excessively or illegally to ensure a good crop harvest, while 57.65% of farmers said they use pesticides mostly according to their own past medication habits, without considering land differences at all or following the guidance of relevant technical personnel, and the number of people who can check their own materials or follow the guidance of township technicians occupies only 8.82%. (Table 2) It can be seen that farmers have less general knowledge about scientific farming and their production methods are extremely unscientific.

Table 2. basis of pesticide use by farmers

	Percentage	Number of people
Habit	57.65%	461
Technical staff guidance	27.65%	221
Self-learning	8.82%	71
other	5.88%	47

4.4. Awareness of Ecological Responsibility is Still Lacking

In the field survey, when asked "whose responsibility do you think environmental protection is" (Table 3), 67% of people chose "environmental protection is the responsibility of government departments"; 22% chose "sanitation workers"; only 11% chose "environmental protection is everyone's business". sanitation workers"; only 11% chose "environmental protection is everyone's business". It can be seen that most farmers put all the responsibility for environmental protection on the government, and do not realize that everyone is responsible for protecting the environment.

Table 3. Whose responsibility is it to protect the environment

	Percentage	Number of people
Government Departments	83.53%	668
Everyone	13.53%	108
Sanitation workers	1.18%	10
Don't know	1.76%	14

With the advancement of agricultural modernization, agricultural economic construction has made great development and progress, but in the process of rapid development has also paid a huge environmental cost. In particular, the ecological environment in rural areas has seriously affected the health and quality of life of farmers, which in turn affects the sustainable development of rural areas. To fundamentally solve the environmental pollution problem, we must firmly rely on farmers to play the role of the main force, change the ideology, enhance the ecological and environmental protection awareness of farmers, so that farmers from economic people to environmental people change, which is an important measure to solve the rural environmental pollution problem.

In ecological environmental protection, resource recycling is an important part. Through the rational and effective reuse of resources, we can improve the capacity and efficiency of ecological environmental protection and realize the level of comprehensive utilization of resources and economic value enhancement. For example, in straw and agricultural film resources, through the effective use of straw and agricultural film resources can achieve good resource utilization effect. Through deep processing of straw, it can effectively improve its utilization rate. In the field of biomass power generation and heat supply, through the rational use of biomass power generation and heat supply, it can not only improve the efficiency of power generation, but also provide certain economic benefits for ecological environmental protection. And in the comprehensive utilization of straw, straw can realize straw, firewood, wheat straw, rice straw, bean straw and other biomass raw materials are used to produce chemical fertilizer, organic fertilizer, feed and other products, etc. In addition, through the recycling and sorting of straw and firewood waste, we can also reduce to a certain extent the environmental impact and waste of resources caused by the decline in the efficiency of the recycling of straw and firewood. In the utilization of waste tires, recycling waste tires can not only increase the service life of tires, improve the quality of tires, enhance the service life of tires and reduce the sewage produced by tires; but also reduce the harmful substances in tires

to the earth and environmental pollution. Thus, it can be seen that there is a close connection between resource recycling and green environmental protection.

5. Conclusion

This paper takes ecological thought as the theoretical basis and green development concept as the goal. By investigating farmers in some areas for empirical research, we understand the current problems of farmers' ecological and environmental protection consciousness, and propose feasible suggestions and measures based on specific problems, such as strengthening farmers' ecological education, improving ecological and environmental protection system, raising farmers' public responsibility consciousness, and vigorously developing circular economy. Due to the limitations of my own level and research conditions, there are many shortcomings in the article: first, the coverage of the survey is narrow; second, the discussion of individual countermeasures is not deep enough; I will continue to improve my ability and perfect the shortcomings in my future scientific research writing in order to achieve greater progress and gains.

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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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