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Impact of Renewable Resources on Economic Development in Rural Areas

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ABSTRACT

With the transformation of global energy structure and the concept of sustainable development, many countries have gradually become the key factor to promote social and economic development in rural areas. Rural areas, as a potential treasure land for the development of renewable resources, are rich in solar energy, wind energy, biomass energy and other resources. The rational development and utilization of these resources can bring many benefits to rural areas. Therefore, the government clearly put forward the strategic development goal of renewable energy, technology innovation and policy support, the key to promote renewable resource utilization, to promote the construction of the rural agriculture and wisdom. However, in the process of rural energy transformation, there are also challenges such as scattered distribution of residents, limited consumption power, and insufficient awareness of environmental protection. Based on this, this paper focuses on how these resource cities can be used to transform into economic advantages in rural areas.

KEYWORDS

Renewable Resources; Rural Revitalization; Economic Diversification; Technology Policy is Driven by Two Wheels.

1. RESEARCH STATUS

Globally, the development of renewable energy is seen as one of the key strategies to reduce poverty and promote sustainable development in rural areas. In recent years, renewable energy projects have shown great potential in poverty alleviation practices in rural areas, providing an effective way to enhance energy accessibility, promote economic diversification and improve residents' living standards. According to the report of the United Nations Environment Program (UNEP), more than 1 billion people around the world live in rural areas that lack modern energy services. Renewable energy technologies, such as solar photovoltaic systems, small-scale wind power and biomass energy, are gradually becoming an important means to fill this energy gap. In rural areas to bring clean and reliable energy solutions (UNEP, 2020).

In China, the application in the field of renewable energy in rural poverty alleviation has been a huge success. According to poverty relief office of the State Council and the National Energy Administration of the joint report, since 2015, China through the implementation of photovoltaic (pv) poverty alleviation projects, has helped millions of rural poor income increase is achieved, the benefits of photovoltaic power station become one of the important sources of income of farmers, Effectively promoted the economic development in rural areas and the poor out of poverty, poverty relief office of the State Council and the National Energy Administration, 2020). In addition, the development and utilization of biomass energy, such as through the transformation of agricultural

waste biomass fuels, not only solve the environmental problems, and provides a new rural employment and a source of income, promotes the rural economy the green transformation [1].[1]

Although renewable energy has shown great potential in rural poverty alleviation, its application and promotion still face many challenges and research gaps. Technical problems to be solved, suitability and cost effective underdeveloped economy, especially in remote and rural areas, how to ensure that the popularity of renewable energy technologies and sustainability, is a hotspot of current research. The lack of financial access and project financing mechanisms limits the large-scale implementation of renewable energy projects, especially for small and community-led projects, and there is a lack of effective financial support and risk management strategies. The mismatch between policy support and market mechanism, as well as the lack of long-term planning for renewable energy poverty alleviation projects, affect the sustainability and impact of the projects. Talent shortages in rural areas in renewable energy technology and management, as well as residents' acceptance of new technologies and ability to use them, are key constraints on project success. Based on this, this paper aims to systematically analyze the application status, achievements and challenges of renewable energy in rural poverty alleviation, and explore innovative strategies and practical paths to promote its sustainable development. Through comprehensive use of literature review, case study and policy analysis, this paper tries to fill the gap in the systematic analysis and strategy design of renewable energy poverty alleviation in current research, provide theoretical support and practical guidance for promoting green transformation and poverty reduction in rural areas, and provide new perspectives and ideas for academic research and policy making in related fields.

2. THE STATUS QUO OF RENEWABLE RESOURCE DEVELOPMENT IN THE COUNTRYSIDE

Globally, the development and utilization of renewable resources in rural areas is gradually becoming a key strategy to promote sustainable development, enhance energy security, promote economic growth and improve the quality of life of residents. In recent years, with the continuous improvement of technological progress, policy support and market mechanism, the application of renewable resources in rural areas has shown a significant growth trend and diversified application mode.

2.1. Solar Photovoltaic Systems

Solar photovoltaic technology is especially significant in rural areas. According to the international renewable energy agency (IRENA) report, worldwide, especially in rural areas of developing countries, solar pv system sustained growth of installed capacity, effectively improved the availability and stability of the energy. In China, photovoltaic poverty alleviation projects have been implemented in several provinces across the country since their launch in 2015, helping a large number of rural poor people to achieve income growth through the proceeds of photovoltaic power stations, significantly improving the rural energy structure and residents' living standards (Poverty Alleviation Office of The State Council & National Energy Administration, 2020).

2.2. Wind Power

Though wind energy application in rural areas are relatively limited, but in the area rich in wind resources, such as coastal and plateau area, small wind power station construction is gradually advancing, in rural areas provides a clean source of electricity, reduce the dependence on fossil fuels.

2.3. Biomass Energy

The development and utilization of biomass energy in rural areas is becoming increasingly prominent, especially in areas rich in agricultural waste resources. The transformation and utilization of biomass

energy not only solves the problem of waste treatment, but also creates new economic sources and employment opportunities for rural areas. According to the report of China's rural energy development, between 2019 and 2021, significantly increased the biomass energy utilization efficiency of China's rural areas, clean energy consumption ratio increased year by year, rural energy structure optimization to promote biomass energy have become important driver of green transformation, to realize the economic diversification and sustainable development has the profound influence, the National Energy Administration, 2022).

2.4. General Trends

Rural development and utilization of renewable resources is gradually from a single technology to develop in the direction of diversification, comprehensive, including solar photovoltaic, wind energy, biomass energy, hydropower and geothermal energy, diversified energy supply system. At the same time, the implementation of renewable resource projects in rural areas not only promotes the optimization of energy structure, but also drives the green transformation of rural economy, and improves the energy security and quality of life of residents in rural areas. Rural renewable resources, however, still faces the development of technology, capital, policy and talent challenges, needs the joint efforts of the government, enterprises and the social from all walks of life, in order to realize its sustainable development goal.

3. THE PROBLEMS EXISTING IN RURAL RENEWABLE ENERGY

3.1. The Lack of Technology and the High Cost Take Their Toll

Technology suitability is a key issue, with rural areas often lacking renewable energy technologies tailored to local conditions. In addition, the high investment cost and the subsequent maintenance and operating costs, limits its economic development. For example, the construction of some rural projects based on biogas, especially the construction of large biogas tanks, has complex technical personnel and insufficient technical force [2].[2]

3.2. Poor Infrastructure

Weak energy infrastructure in rural areas, such as obsolete power grid equipment and insufficient supply of gas and natural gas, has limited the effective supply of rural energy and affected the satisfaction of rural production and domestic electricity demand, which in turn has affected the implementation of poverty alleviation work.

3.3. The Use of New Energy is Not Reasonable

In view of the different levels of living standards, the energy consumption of different rural areas are also different, related data show that rural electricity for cooking in the family is not more than 65%, using biogas cooking at about 10%, among them, and 8% use natural gas and liquefied petroleum gas, and 17% in rural environment About family in the use of fire to maintain the supply of household energy survey, for small areas of agricultural production, processing and feed livestock food, 90% energy and energy output from wood, straw [3]. [3]In addition to the use of biogas and electricity, which will not cause damage to the environment, other combustion will cause a large amount of CO emissions, which is contrary to the long-term sustainable development. Because under the support of traditional industries, China has traded high pollution, high consumption, huge waste and low quality for social and economic growth [4].[4]

3.4. Comprehensive Utilization of Low Consumption

At present, the total recovery rate of mineral resources is only about 30%, 20 percentage points lower than the world average level. The comprehensive development of symbiotic and associated mines only accounts for one-third, and the comprehensive recovery rate is less than 20%. The phenomenon of the main mining abandoning the auxiliary, the rich mining abandoning the poor, the easy mining abandoning the difficult, and even the looting mining, serious waste and destruction of resources is quite serious [5].

4. SOLUTIONS

Strengthening rural energy infrastructure. Comprehensively considered the condition of social and economic development in rural areas and the energy development needs, strengthen the construction of rural power grid, improve power supply reliability and intelligent levels. In areas where economic conditions permit, we will strengthen infrastructure construction such as gas pipe networks and heating pipe networks to ensure the realization of centralized gas and heating supply.

Attach great importance to improving the level of research and development and promotion of technology. Must strengthen the construction of renewable energy in rural areas in the development of applied research, applied research results to the actual construction and development process, for renewable resources in the rural construction professionals in the fields of study also need this joint is committed to research and explore [6].[6]

Strengthen the construction of rural energy socialized service system. Form the technical service system of sustainable development, to introduce all kinds of investment subject, foster professional management and service enterprises, explore the commercial operation mechanism and mode, to improve rural energy services.

Increase investment in funds. In the development stage of renewable resources, a large amount of capital needs to be invested to meet the needs of some development. However, for rural areas, it is far from enough to rely on the investment of capital alone, but also rely on the policy needs of the government. In this case, the government must play its own macro-control role to help the rural renewable resource industry absorb social financing, realize the enhancement of capital investment in the rural renewable resource industry, and provide the most basic guarantee for the development of the rural renewable resource industry [7].[5]

5. THE SIGNIFICANCE OF RURAL RENEWABLE RESOURCES FOR POVERTY ALLEVIATION

Rural areas often lack a stable electricity supply, and the use of renewable energy sources such as solar and wind can provide a reliable and environmentally friendly energy solution. For example, solar home systems can be installed directly in farmers' homes to provide electricity for lighting and household appliances, reducing reliance on traditional fuels and improving quality of life while reducing indoor pollution.

Farmers can earn extra income by participating in renewable energy projects. For example, a PV system can not only be used for its own use, but the excess power can also be sold to the grid, resulting in revenue from selling electricity. In addition, some regions have created new income opportunities for farmers by developing biomass energy, such as converting crop residues into biofuels.

The development and operation of rural renewable energy projects requires a range of services and products, which can boost local industries. For example, the development of the photovoltaic industry has driven employment opportunities in the manufacturing, installation and maintenance of photovoltaic panels, providing jobs for local residents and promoting economic growth.

In order to support renewable energy projects, it is often necessary to improve local infrastructure, such as the power grid, roads and Bridges. These infrastructure improvements will not only help the operation of the energy project, also facilitate the other development activities in rural areas, improve the living standard of the residents.

In economic development, material cost is an important part of the overall cost, which is related to the comprehensive benefits of the overall economic development. Only by effectively reducing the cost of materials can we improve the quality of economic development and meet the needs of circular economy development [8]. [8]Promote the sustainable development of renewable resources economy, so renewable resources to rural economic development has brought a ray of life

6. CONCLUSION

To sum up, China is a big agricultural country. Making good use of renewable energy can bring economic benefits to the economy of rural areas, and is an important means of national poverty alleviation. The Times are constantly developing and changing. In the new economic strategy, it is necessary to realize the coordinated development of renewable resources and renewable capacity of the economy. In order to achieve the ambitious goal, we need the support of policies, rational use of renewable resources and other means, so that the concept of sustainable development can be rooted in our hearts. Reasonable scientific and technological support can accelerate the sustainable development of modern economy faster.

REFERENCES

[1] Zhang, S. (2024) Green transformation of the rural economy in the concept of green development countermeasure analysis. Journal of shanxi agricultural economy, 02:153-155.

[2] Zhang, Z. (2019) Renewable resources use in the rural area in the development of the status quo analysis. Journal of marketing, 29: 21-22.

[3] Guo, S. (2015) The sustainable development of rural renewable resources study. Journal of Jiangsu agricultural science, the lancet, 6: 472-474.

[4] Li, Y. (2010) Analysis of China's low carbon economy development and renewable resource utilization. Journal of accounting research, 4: 72-75.

[5] Li, J., Hu, Y., Hu, R. (2008) Current situation, existing problems and countermeasures of renewable resources development and utilization in China. Inner Mongolia Environmental Science, 01:53-56.

[6] Liu, Q. (2012) Barbara wang. Renewable resource utilization in rural areas in the development of the status quo analysis. Commercial Culture (The Second Half of the Month), 07:154.

[7] Luo, J., Wang, Y. (2015) Discussion on rural regional development and utilization of renewable resources. Heilongjiang Science and Technology Information, 10:23.

[8] Cai, H. (2013) Discussion on the development and utilization of environmental renewable resources. Green Science and Technology, 07:230-231.