

Research on Rural Revitalization and Low-Carbon Transformation Development under the Background of New Energy

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Abstract: With the continuous growth of society, society has new goals and requirements for rural construction. On the one hand, rural areas are required to promote the growth of economic industries and obtain economic benefits; on the other hand, it is necessary to improve the rural ecological environment and promote farmers' long-term stability. Under the influence of this strategic goal, China pays attention to giving priority to the growth of rural economy and promoting the optimization of rural exhibition structure. Therefore, it is necessary for rural areas to continuously innovate new energy technologies and promote their industrial development. The interaction between the rural industrial structure and industrial transformation trend in China and the growth of low-carbon rural areas in China has become increasingly prominent. If we want to realize ecological and low-carbon rural development, we must examine the industrial strategy in the stage of rural economic growth and low-carbon in China. According to the requirements of rural revitalization strategy, this paper analyzes the current ecological problems in rural areas of China and puts forward the countermeasures, and puts forward the rural revitalization and low-carbon transformation development strategy under the background of new energy.

1. Introduction

The imbalance between economic growth and ecological construction, especially the ecological problems in rural areas of China, has seriously affected the construction of China as a socialist modern power[1]. The proposal of rural revitalization strategy is related to the growth of new energy technologies, and has positive significance for promoting local economic construction and ecological construction[2]. In order to further transform the structure of energy development and utilization, we need the joint efforts of all sectors of society. The rapid growth of carbon emissions has brought many environmental problems, and at the same time, China is facing enormous pressure to reduce emissions at home and abroad. Under the severe realistic background, China proposed to optimize the energy structure and upgrade the industrial structure by adjusting the economic structure and development mode, so as to improve the carbon emission efficiency, ultimately reduce the total carbon emission and achieve the goal of low-carbon development[3]. Agriculture, farmers and rural areas play an irreplaceable role in China's social economy, and the low-carbon in rural areas of China is also an important part of China's low-carbon progress[4]. The interaction between the rural industrial structure and industrial transformation trend in China and the growth of low-carbon rural areas in China has become increasingly prominent. If we want to realize ecological and low-carbon rural development, we must examine the industrial strategy in the stage of rural economic growth and low-carbon in China[5].

The rural revitalization strategy clearly requires both industrial revitalization and ecological revitalization. Farmland, grassland, forest and other ecosystems are both carbon emission sources and important carbon sink resources[6]. In the context of the general deterioration of rural environment, illegal sewage discharge caused by industrial development in many places has seriously polluted local water sources, and rural non-point source pollution and long-term lack of dredging have also led to river eutrophication and serious siltation[7]. In order to achieve the goal

of reducing carbon emissions per unit output value, the China Municipal Government will take the improvement of economic efficiency, the optimization of economic structure and the reduction of carbon emissions as important targets and binding indicators of social and economic growth, and bring them into the medium-and long-term planning of macroeconomic and social development, and formulate corresponding domestic monitoring, statistics and assessment methods[8]. Rural industries must coordinate the relationship between green development and industrial revitalization, give consideration to protection and development, explore low-carbon countermeasures from the industrial level, strengthen the support of low-carbon technology, and promote the organic combination of green and low-carbon and industrial development[9]. According to the requirements of rural revitalization strategy, this paper analyzes the current ecological problems in rural areas of China and puts forward the countermeasures, and puts forward the rural revitalization and low-carbon transformation development strategy under the background of new energy.

2. Rural Revitalization and New Energy Technology

New energy technology refers to a kind of technology that uses nuclear energy technology, solar energy technology and coal technology to work, and it is a pillar industry of high technology. Among them, the innovation of new energy technology is based on nuclear energy technology and solar energy technology. Adopting new energy for agricultural production, industrial production and daily life can effectively improve the effectiveness of work and life, increase the economic output of social development and promote the sustainable growth of society. With the growth of rural economy and society and the deepening of commercialization of agricultural industrialization, rural carbon emissions have gradually increased, and the proportion of rural carbon emissions in the total social emissions has been continuously improved. The problem of rural carbon emissions and rural low-carbon development has attracted more and more attention. Rural residents are the main body of rural revitalization, and making rural residents willing to accept and enjoy a green and low-carbon life is an important content to promote rural green development.

3. Problems Existing in Rural Ecological Construction under the Background of Rural Revitalization

3.1 The Rural Ecological Environment is Seriously Damaged.

Under the background of long-term production development, rural residents are accustomed to the production and lifestyle of directly using consumable energy. Therefore, after the emergence of new energy, farmers did not realize its convenience and economy, and could not take the initiative to use new energy in production and life. If there is no shortage of traditional energy, farmers will invest in new energy fields. At present, there are still some shortcomings in the innovative technology of new energy in rural areas of China, which may lead to the lack of scientific research strength in the growth of new energy in rural areas, and thus the project cannot be effectively promoted. At the same time, some new energy technologies in China need to be imported from abroad, which causes a lot of waste of funds, increases the cost of new energy use, and the innovation of new energy in rural areas cannot be effectively developed. When new energy innovation is carried out, there will be no relevant funds to support it, which is also the fundamental factor restricting the growth of new energy innovation. In addition, on the basis of the growth of market economy, the relevant units have not formulated a scientific incentive mechanism for the growth of new energy, so the innovation of new energy can not be implemented smoothly.

3.2 Farmers' Participation in the Stage of Rural Ecological Governance is Low

Farmers, as the protagonists in promoting the construction of rural ecological civilization, are the backbone of rural ecological construction. Therefore, it is not feasible to rely solely on the government and enterprises for the success of rural ecological management, and farmers need to actively participate. However, compared with other participants, farmers' sense of identity in ecological governance is low, and their ecological awareness is indifferent, which leads to their low

participation in ecological governance practice. In pursuit of agricultural income, farmers over-cultivate the land, or use a large number of chemical fertilizers, agricultural films and pesticides to increase the yield of crops, which leads to serious pollution of the land and continuous decline of land fertility. Under the traditional growth mode of extensive economic, the economic growth in some rural areas is in contradiction with the ecological environment protection[10]. In the stage of processing and using new energy, most of the use and production of silicon wafers and their core equipment need to be imported from abroad. This phenomenon leads to the growth of new energy technology at the bottom of the value chain, which is not conducive to the innovation of new energy technology. At present, the growth of rural areas in China is slower than that of cities. The rural areas lag behind the cities in industrial development, capital and technology, and lack the material basis to attract foreign ecological management professionals. In addition, the loss of high-quality population in rural areas is serious, resulting in poor rural ecological autonomy. The lack of professionals in rural ecological governance has affected the stage of rural ecological governance.

4. Low-Carbon Transformation Development Strategy of Rural Exhibition Industry

4.1 Improve the Rural Ecological Governance System

In the stage of promoting rural revitalization in an all-round way, the construction of ecological livability in rural areas is very important. Marxist theory of ecological civilization is rich in connotation, which takes human survival as the main line and the harmonious coexistence of man and nature as the purpose, and establishes ecological values of respecting and protecting nature for everyone. The standard to determine the development level of low-carbon rural areas is not a single static indicator, but a dynamic indicator. To measure whether a village is in the stage of low-carbon, it does not depend on whether the carbon emissions, energy consumption, per capita carbon emissions or carbon emissions per unit output value of the village have reached a certain level at a single time, nor does it depend on whether the energy structure, industrial structure or lifestyle of the village have reached a certain standard[11]. Rural energy infrastructure provides an important support for agricultural production and energy supply for farmers' lives. Under the background of promoting rural revitalization strategy, urban-rural integration and new infrastructure development, rural energy infrastructure construction will usher in development opportunities. It is necessary to promote the treatment of rural garbage, establish and improve the rural garbage treatment system from the actual situation in rural areas, and promote the local classification and resource utilization of garbage in rural areas where conditions permit. The architecture of new energy data center is shown in Figure 1.

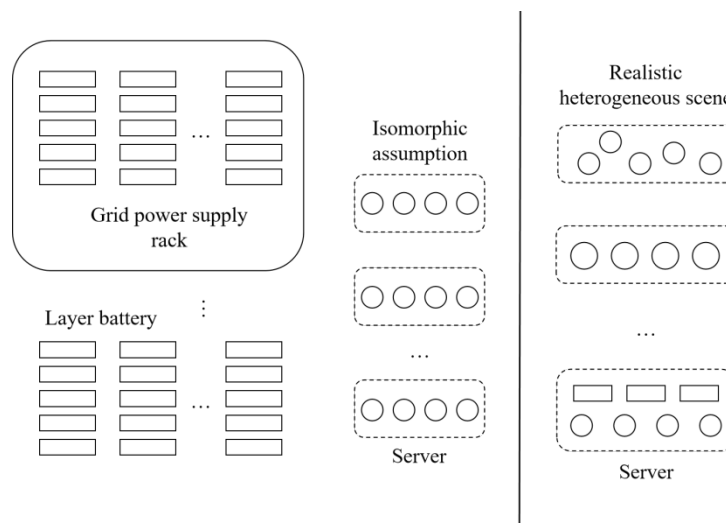


Fig.1 New Energy Data Center Architecture

For areas close to large power grids, energy supply can be strengthened by expanding power

grids and strengthening the transformation and upgrading of rural power grids. For remote areas, after comparative analysis of technology and economy, energy stations such as photovoltaic, wind power, small hydropower and biomass energy can be built according to local conditions, and advanced technologies such as independent microgrid can be adopted to meet local energy demand. In the stage of innovating new energy technologies, we should intensify our efforts to design raw materials and core equipment, pay attention to technology development, and establish an independent innovation system by actively cooperating with advanced regions, introducing science and technology, and innovating technology forms.

4.2 Enhance the Enthusiasm of Farmers to Participate in Rural Ecological Governance

Considering the social and economic growth conditions, energy development needs and urban-rural integration development requirements in rural areas as a whole, rural energy infrastructure construction will be included in the rural revitalization plan, together with road construction and water supply facilities. We should strengthen the construction of rural power grid, improve the ability of interconnection and mutual supply, and improve the reliability and intelligence level of power supply. Rural environmental protection departments should do a good job in supervising the behavior of village cadres and farmers, and supervise whether village cadres actively carry out ecological management in the village and whether farmers actively protect the ecological environment. At the same time, it is necessary to constantly upgrade the professional equipment of the environmental protection department, increase the management funds of the environmental protection department, and train professionals to lay a solid foundation for doing a good job in supervision. Finally, improve the rural environmental law enforcement mechanism. The stage of rural revitalization and low-carbon transformation under the background of new energy is shown in Figure 2.

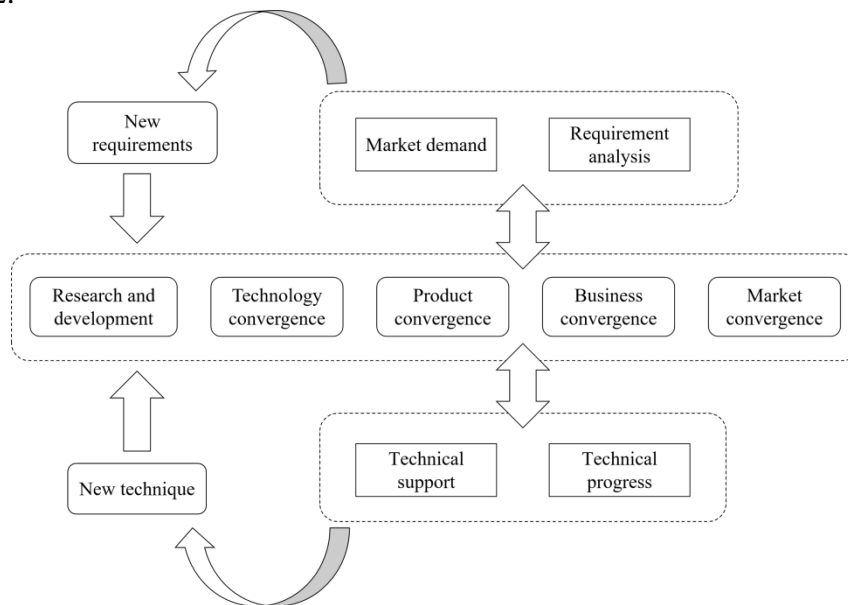


Fig.2 Rural Revitalization and Low-Carbon Transformation Process

When innovating wind power generation technology, we can build wind power projects in different rural areas, constantly speed up the project approval and project construction stage of wind power generation, and promote the scale of wind power generation. In solar power generation, photovoltaic power generation and solar photothermal technology can be used to promote the construction of silicon material industrial bases in different regions, promote the smooth construction of thin-film solar cell industrial bases, and at the same time, continuously promote the development and research of high-end products. In terms of energy consumption, according to the living and production energy consumption of rural residents and the development level of China's electric energy replacement mainstream technology, the rural electrification upgrading project will be fully implemented on the premise of meeting the technical and economic performance, and the

rural green travel and clean energy heating projects will be vigorously promoted.

5. Conclusions

The study of low-carbon villages will promote the growth of rural life to low-carbon. The study of low-carbon rural areas is not only the study of theoretical methods and analytical tools, but also the empirical research based on practical investigation, which will promote the growth of rural life to low-carbon. The interaction between the rural industrial structure and industrial transformation trend in China and the growth of low-carbon rural areas in China has become increasingly prominent. If we want to realize ecological and low-carbon rural development, we must examine the industrial strategy in the stage of rural economic growth and low-carbon in China. The construction of low-carbon villages cannot be at the expense of economic cost and production loss. The low-carbon development without economic foundation or low production capacity is unsustainable and will surely return to the development mode of high emission. In order to improve the rural development, it is necessary to strengthen the innovation of new energy technology and promote the growth of rural revitalization strategy with the assistance of new energy. After the economic growth has reached a certain stage, the priority between economic growth and ecological protection needs to be considered. When making a trade-off, we must take the protection of the ecological environment as the priority goal and sacrifice certain economic interests in order to realize sustainable rural development.

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