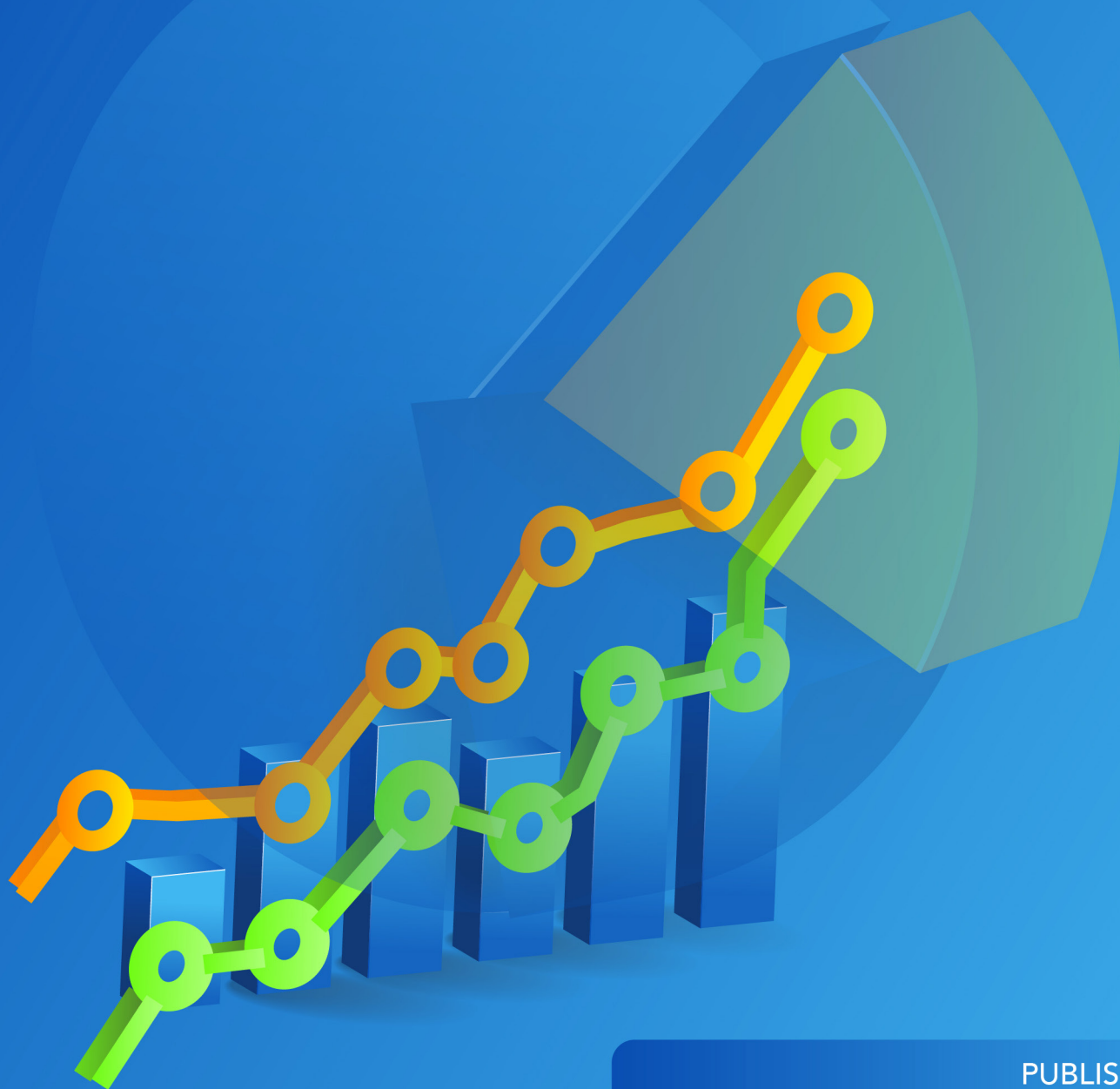


AMERICAN JOURNAL OF APPLIED STATISTICS AND ECONOMICS (AJASE)

ISSN: 2992-927X (ONLINE)

VOLUME 3 ISSUE 1 (2024)



PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

Research on the Development of Green Energy Ecological Economy Industry

Kailun Gu¹, Jiaying Li^{1*}, Yulin Qin²

Article Information

Received: May 06, 2024

Accepted: June 04, 2024

Published: June 08, 2024

Keywords

*Green, Economy Renewable,
Green and Low-Carbon*

ABSTRACT

Since modern times, with the rapid development of the economy and the improvement of people's living standards, people have gradually begun to pay attention to green environmental protection, attach importance to the development of green economy, and at the same time, the development of green economy has also put forward the adjustment and optimization of industrial structure. Today's green economy has become the trend of the times, and it is an economic development path to realize the harmony between man and nature. Continuously strive to promote the green and low-carbon transformation of energy, it will provide important support and reference for the development of renewable energy in the Republic. Based on the analysis of the literature and the data of the National Bureau of Statistics, this paper puts forward the problems existing in today's green ecological economy, and gives relevant reasonable suggestions for these problems, hoping to provide relevant references for energy economy enterprises, so as to promote complementary advantages and promote the development of national energy transformation. In order to promote the economic value and economic development significance of green economy in ecological and environmental protection, so as to realize the prospect of green economic development from the perspective of ecological and environmental protection, and the effective path of today is discussed and summarized, in order to help the development of China's green economy.

INTRODUCTION

The development and research of green energy is the general trend of social development. With the global emphasis on environmental protection, the development and research of green energy gradually become the top priority of global development (Gao Teng, 2022). Green energy is pollution-free, low-cost, and has no side effects, and as a new green and environmentally friendly sustainable energy form that can replace traditional fossil fuels, green energy will become a major component of the future energy structure. Therefore, we should promote the development and use of green energy (Wei Hongxiang, 2022).

In recent years, people have gradually realized that energy is an important factor that promotes and restricts the country's economic development. The world is facing problems such as energy shortage, continuous deterioration of the ecological environment, and climate change, and the development of renewable energy has become an important direction to solve future global development problems (Jin Xiaoxuan, 2022). As a responsible major country, China attaches great importance to promoting its own and other countries' joint efforts to achieve green and low-carbon energy transformation and development (Zhang Xuesheng, 2022). In particular, in 2021, President Xi Jinping made it clear in his important speech at the General Debate of the 76th Session of the United Nations General Assembly that "China will strive to peak carbon emissions before 2030 and achieve carbon neutrality before 2060" and "China will vigorously support the green and low-carbon

development of energy in developing countries, and will not build new overseas coal-fired power projects" (Huang Qili, 2018). Under the framework of the Belt and Road Initiative and the Paris Agreement, China should not only optimize its energy structure and leap to the high-quality development of renewable energy, but also support and promote the green and low-carbon energy transformation and development of the countries in the Belt and Road Initiative, and make unremitting efforts to achieve the goals of the Paris Agreement (Lv Jiangtao, 2022). Global Renewable Energy Development Overall, on the investment side, renewable energy has become the most important area of energy investment, with China's renewable energy investment ranking first in the world, and global fossil energy still dominates the development status and trend of renewable energy, but the growth momentum of renewable energy utilization is strong (Long Houyin, 2018).

LITERATURE REVIEW

The Current Situation of China's Green Energy Economic Development Renewable Energy Industry

In recent years, with the discovery and research of renewable energy, its green environmental protection value has gradually become a hot spot of concern in countries around the world, and has begun to be valued in economic development and maintenance of the ecological environment, and with the increasing proportion of the energy industry in the social market, as shown in Figure 1, in 2018, China's renewable market energy reached 1.89

¹ Belarusian State University Business School, Master Candidate, Minsk, Belaru

² SiChuan hope automtie vocational college, Ziyang City, Sichuan Province, China

* Corresponding author's e-mail: yulinqin51@gmail.com

billion US dollars, and the scale reached in 2019 2.09 billion US dollars, with a scale of 2.33 billion yuan in 2020, 2.74 billion yuan in 2021, and 3.37 billion yuan in 2022. China vigorously develops renewable energy, with energy conservation, pollution reduction, and environmental improvement as the core, and in the future development, China will pay more attention to the research and development and implementation of renewable energy technologies.

In 2017, General Secretary Xi Jinping put forward the strategic idea of “four energy revolutions and one international cooperation”, and renewable energy has become the core of the energy transition. Renewable energy resources are abundant, environmentally friendly and clean, and the development of renewable energy is conducive to the protection of the natural environment and the sustainable development of social economy. China has abundant reserves of energy resources such as wind, hydro, solar, marine, and solar energy. As of the end of June 2023, the country’s installed hydropower capacity was 418 million kilowatts, biomass power generation capacity was 43 million kilowatts, solar power generation capacity was 471 million kilowatts, wind power installed capacity was 390 million kilowatts, and the total installed

capacity of renewable energy power generation exceeded 1.3 billion kilowatts, reaching 1.322 billion kilowatts, a year-on-year increase of 18.2%, accounting for about 48.8% of China’s total installed capacity. From January to June, China’s new installed capacity of renewable energy power generation was 109 million kilowatts (accounting for 77% of the country’s new installed capacity). Among them, 5.36 million kilowatts of hydropower, 22.99 million kilowatts of wind power, 78.42 million kilowatts of solar power generation, and 1.76 million kilowatts of biomass power generation were added. The country’s renewable energy generation capacity reached 1.34 trillion kilowatts.

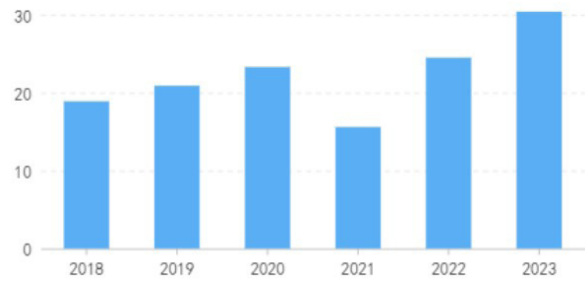


Figure 1: Energy analysis of China’s renewable market
Source: [https://www.stats.gov.cn/]

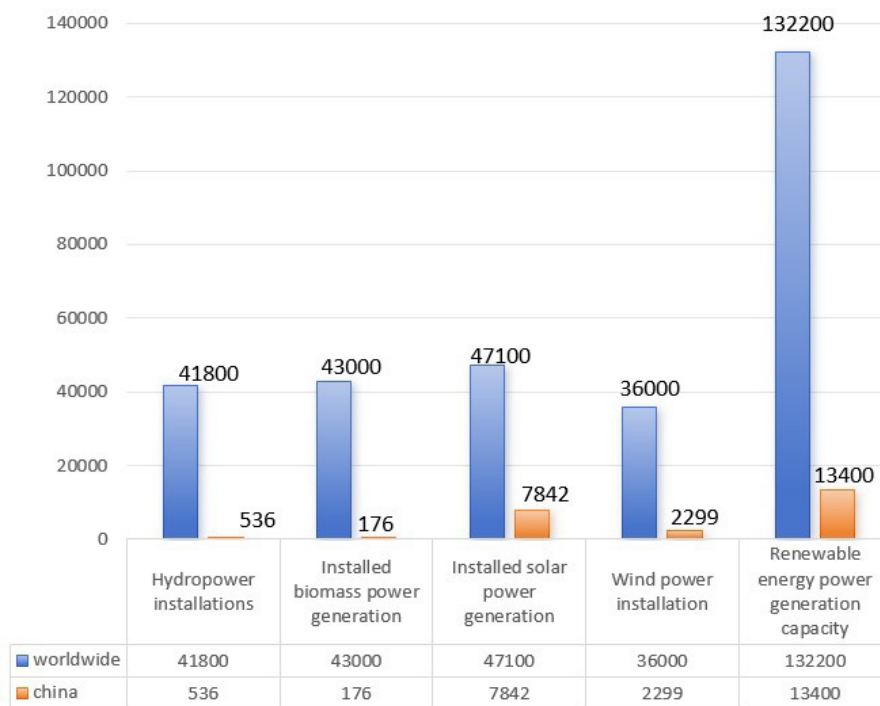


Figure 2: Comparison of the renewable energy industry in China and the rest of the country
Source: [https://www.stats.gov.cn/]

Sustainable Energy Industry

A sustainable energy industry is a development model that is based on meeting the energy needs of the present without compromising the energy needs of future generations. Under the current situation of rapid growth of global energy demand and the gradual depletion of non-renewable energy reserves, the

sustainable development of the energy industry has become an important direction to lead the development of the energy industry. In terms of the development of the sustainable energy industry, the first is the rapid development of renewable energy. Renewable energy sources such as solar, wind, and hydro have gradually become mainstream forms of energy. In particular, the

solar energy industry has made great breakthroughs in recent years, and the scale of the photovoltaic power generation market continues to expand. At the same time, wind energy has also become an important form of renewable energy, and wind farms have been built in various places, so that wind power generation capacity has been continuously enhanced. Second, significant progress has been made in energy storage technology. Renewable energy is characterized by unstable power generation capacity, and the development of storage technology has become the key to solving this problem. At present, the continuous breakthrough of battery technology has continuously reduced the cost of energy storage, and the promotion of electric vehicles has also provided a huge market demand for the development of energy storage technology. The application of smart energy systems is also gradually becoming popular. The intelligent energy system uses artificial intelligence, big data and other technologies to achieve efficient management of energy and improve energy efficiency. The construction and application of smart grids continue to advance, with the help of the Internet of Things and cloud computing technology, real-time monitoring and regulation of energy have been realized. However, there are still some challenges to the sustainable energy industry. The first is the dilemma of technological innovation. Although significant progress has been made in the development of renewable energy, there are still problems of inefficiency and high cost. There is a need to continue technology

research and development to improve the efficiency of renewable energy use and reduce costs. Although the sustainable energy industry faces some challenges, with the continuous breakthrough of renewable energy technology and the support of government policies, the sustainable energy industry is expected to achieve faster and healthier development in the future.

At present, the world is facing great climate problems, such as the rise of the earth's temperature, the warming of air temperatures, the melting of permafrost, the rise of sea levels, the destruction of the ozone layer, the imbalance of natural ecosystems, and the sharp decline of biological species.

In this environment, clean recycling, waste utilization is particularly important, there have been many clean recycling energy industry, and the global market size continues to expand, clean recycling energy industry has become a hot spot for global energy investment, attracting a large number of talents and a large amount of capital, clean recycling energy gradually development and utilization, is conducive to further improving the ecological environment, improve the quality of life of all classes, social benefits gradually emerged. At present, there are 42 million biogas users in the country, and the annual output of biogas in the country is more than 15.8 billion cubic meters, replacing more than 25 million tons of coal, reducing carbon dioxide emissions by more than 60 million tons, and greatly improving the environmental situation and rural quality of life.

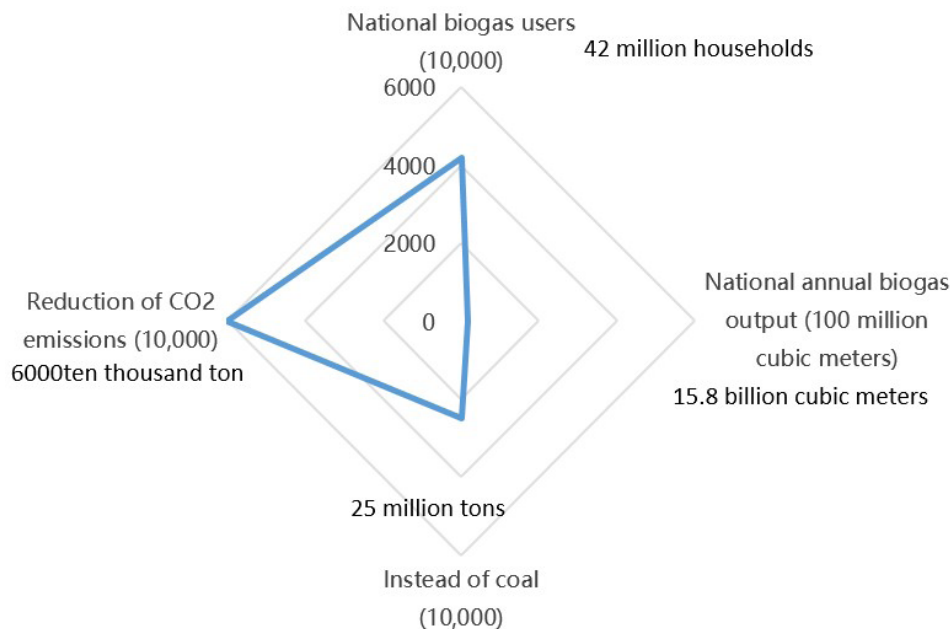


Figure 3: Analysis of the use of biogas for sustainable development in China source: [https://www.stats.gov.cn/]

MATERIALS AND METHODS

The Development of China's Green Energy Economy Issues Related to Government and Policy

China attaches great importance to and vigorously develops the green energy industry, the scale and influence

of the clean energy industry are constantly expanding, the state has increased the supervision of environmental pollution and the elimination of enterprises with large energy consumption and serious environmental pollution, which can not only inhibit the development

of high energy consumption industries, but also increase efforts to support the development of green and clean energy industries with low energy consumption. With the attention of the national and local governments, China's green energy industry has developed rapidly, and significant progress has been made in all aspects of clean energy legislation, industrial policy and government policy. However, there are still some deficiencies, because the green energy economy is a new issue raised in recent decades, and its understanding and research have certain limitations, so the direction and methods of supporting green energy need to be improved, and relevant policies and laws and regulations should also make new changes and improvements with the problem. When new problems arise, a lot of manpower, material and financial resources will be invested in studying and solving them. The initial research and development cost is high, which restricts the development of the green energy industry to a certain extent, so the state's financial support is particularly important for the development of the new green energy industry. The government should strengthen its support for the development of the green energy industry and promote the sustainable development of green energy. The government has strengthened the supervision and implementation of policies to ensure that policies can be carried out normally and effectively.

The Issue of Green Energy and Economic Development of Enterprises

At present, green energy enterprises have been established

not long ago, the social foundation is not solid, its ability to resist risks is not high, once it encounters some problems, it may fall into a great predicament, the enterprise economy is not stable enough, there is not enough economic support, some enterprises want to further study how to reduce production costs and other issues are more difficult. In the absence of research results, some banks are reluctant to help and do not give loans, which is likely to bankrupt the company.

The second is that the quality of economic operation is not very high, and the investigation and research found that the profits of China's green energy enterprises continue to grow. As shown in Figure 4, Xintian green energy companies will grow by 15.01% in 2022, but their profit growth still does not meet the expected standard. After the steady growth of profits from 2019 to 2020, in the context of the three-year epidemic, the load rate of China's green energy enterprises continued to grow: in 2021, the epidemic led to an overall decline in profits, only 10.54%, and the epidemic will be completely controlled in 2023. The economy rose by 21.86%.

At this stage, some banks in China have not set up lending institutions for new green energy enterprises, and have not improved the relevant loan policies, which leads to some green energy enterprises do not have sufficient financial support, no reasonable source of funds, which narrows the financing channels of enterprises. This situation may lead to the adoption of informal channels by a small number of SMEs, which may limit the development of enterprises.

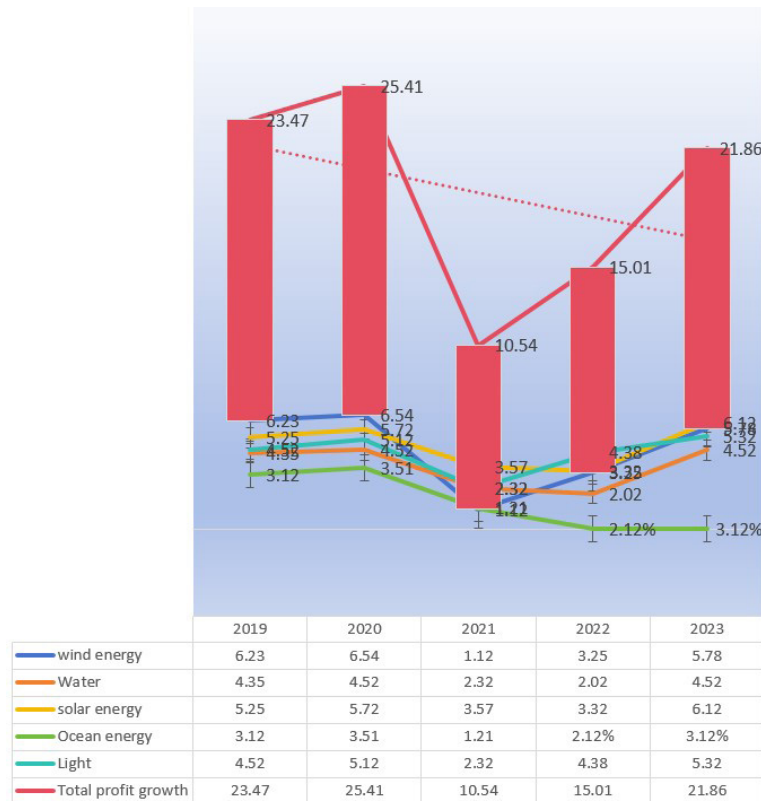


Figure 4: Economic profit of Xintian green energy enterprises from 2019 to 2023

Source: [https://www.stats.gov.cn/]

RESULTS AND DISCUSSION

Suggestions on the Development of China's Green Energy Economy

Policy-Related Recommendations at the Government Level

The lack of policy support restricts the development of the sustainable energy industry. Government departments should introduce more targeted and long-term policies to provide a better development environment and support for the sustainable development of the energy industry. Further improve the policy system for green energy development, clarify the scope and methods of support and how to specifically support the development of enterprises. Establish a unified market rules and regulations, introduce new policies to standardize the development behavior of enterprises, increase support for green energy, and give relevant subsidy policies, incentive policies, and incentive policies. Formulate relevant tax reduction policies to reduce the development cost of green energy. The government should work with enterprises to actively promote the formulation and implementation of relevant international standards, further improve the international competitiveness of China's green energy industry, and let China's green energy enterprises have the confidence to go abroad and go to the world.

Suggestions on the Development of Products and Economic Development Trends of Enterprises

Determine the function of the enterprise, take the function as the center to develop the company's product development plan, conduct social surveys, market research, and accurately understand the needs of users, the needs of the market, and then analyze the gap between the current market environment and the ideal market environment, what is the gap between the products provided by the enterprise and the ideal products in the minds of users, and obtain useful information such as which areas are still blank or which products are more different from the ideal products in the hearts of users. Conduct a comprehensive analysis of each workshop of the enterprise, and weave a specific product development plan to deal with problems and customer service deficiencies. Then try to reduce the cost as much as possible, should reduce the total cost of the product throughout the whole process of new product development, and coordinate the relationship between manufacturing cost and use cost, in the maximum degree of cost reduction, cost reduction is not to cut corners to reduce, but to use raw materials as much as possible to recycle, and then form a virtuous circle of new product development, as far as possible to reduce the generation of industrial waste.

CONCLUSION

The market for green energy is vast in the future, but due to the lack of technology, the cost is high for the time being. The investment in the new energy industry is larger, but the time cycle of recovering the cost is relatively long, due to a series of factors such as high cost, limited technology and incomplete government policies, etc., the profitability of development enterprises has been in a low state, which has brought a great adverse impact on the development of green energy, and has a negative impact on the development of the industry. However, China's territory is vast; green pollution-free energy is a huge wealth in China, so we should work hard to explore and develop. The state should vigorously support and encourage it. With the government as the leading and the enterprise as the main body, we will purposefully and selectively introduce advanced technology, technology and key equipment at home and abroad, increase cooperation with domestic and foreign scientific research institutes and well-known enterprises, and develop technology and equipment with international advanced level and independent intellectual property rights as soon as possible, so as to enhance industrial competitiveness.

REFERENCES

- Hongxiang, W. (2022). Industrial Structure Change and Green Economic Development in Ethnic Areas. *Journal of Nanning Vocational and Technical College*, 23-25.
- Houyin, L., Lin, L., Weidong, L. (2018). Analysis of China's primary energy development potential. *Journal of Ningde Normal University (Natural Science Edition)*, 11-13.
- Jiangtao, L. (2022). Renewable Energy Promotes China's Green Development[J], *China Economic Weekly*, Renewable energy promotes China's green development. *China Economic Weekly*, 8-9.
- Qili, H. (2018). Enlightenment of China's renewable energy development to the construction of global energy interconnection. *Global Energy Interconnection*, 13-15.
- Teng, G. (2022). Analysis of the Green Economic Development of Yulin City from the Perspective of Marxist Ecological Concept, *Modern Commerce and Trade Industry*, 35-36
- Xiaoxuan, J. (2022). Exploration of Economic Development Issues from the Perspective of Green Economy. *Green Economy*, 6-7.
- Xiaoxuan, Z. (2022). Research on the impact of industrial agglomeration on green economic development from the perspective of technological innovation. *Journal of Fujian Normal University*, 6-9.