

Sokhan Inna

*Doctor of Economic Sciences,
Professor at the Department of Management
named after Professor L.I. Mykhailova,
Sumy National Agrarian University*

Сохань І.В.

Сумський національний аграрний університет

Xie Fei

*Ph.D. Student at the Department of Management
named after Professor L.I. Mykhailova,
Sumy National Agrarian University*

Сяй Фей

Сумський національний аграрний університет

ENERGY INVESTMENT AND COOPERATION BETWEEN CHINA AND COUNTRIES ALONG “THE BELT AND ROAD”

ІНВЕСТИЦІЇ В ЕНЕРГЕТИКУ ТА СПІВРОБІТНИЦТВО МІЖ КИТАЄМ І КРАЇНАМИ ВЗДОВЖ “THE BELT AND ROAD”

Summary. Energy is the basis of the country's economic development. China is a major supplier and consumer of energy, with a continuous increase in energy demand, which leads to deficiencies in its stable supply and serious problems such as import dependence, which seriously affects the country's energy security. The countries of the “Belt and Road” have sufficient energy resources, which creates the potential for expanding energy cooperation with China. It is very important to build a community of shared energy circle with countries along the Belt and Road, build a diversified energy strategic system, and expand the chain of energy production and transformation to promote energy cooperation between China and countries along the Belt and Road. In today's conditions of globalization and economic development, the management of energy development has become an important issue for the development of China's national economy. Understanding the relevant research concepts and improving the theory of energy development management can help in making management decisions, increase the efficiency of commodity producers and strengthen the sustainability of Chinese territories. This article explores the theoretical foundations and practical applications of energy development management in detail, with the aim of providing useful guidance and reference materials for energy investment decision-makers by identifying key concepts, analyzing theoretical foundations and research methods. Thus, relevant concepts and main problems of energy investment management and theories of economic growth of rural

areas by investing in the energy sector were presented. Various views of the classical theory of economic growth and development of rural areas were collected; the main obstacles to the development of energy investment are identified, including state macro-control at various stages of regional development.

Keywords: “The Belt and Road”, energy investment, cooperation, China, sustainable development, energy development.

Problem statement. Establishing relevant systems and mechanisms on energy cooperation with countries along the “the Belt and Road” has been the primary content and prominent focus of the “the Belt and Road” initiative since it was put forward. Against the backdrop of the country's active implementation of the opening up strategy, Chinese energy enterprises are constantly increasing economic exchanges and energy cooperation with major countries along the “the Belt and Road”, such as Central Asia, West Asia and Southeast Asia. While ensuring the steady development of national energy supply and demand relations, it also provides full protection for the maintenance of world energy security and the development of economic pattern, and lays a solid foundation for subsequent cooperation with countries along the “the Belt and Road”.

Analysis of recent research and publications. Currently, the Chinese economy is transitioning

from a quantity based economy that relies on resources to increase economic growth to a quality based economy that relies mainly on high-tech. By Zhang Suoxu, in the process of transforming the mode of economic development, it has become particularly important to break away from relying on energy to promote economic development [1]. However, as China is one of the countries in the world with relatively imbalanced energy supply and demand, it faces extremely severe challenges in promoting high-quality and quantitative economic development, as well as the imbalance between energy supply and demand.

Nie Aiyun, He Xiaogang in their research “China’s “the Belt and Road” investment: progress, challenges and countermeasures” China is a country with an imbalance in energy supply and demand, and energy imports have become an important means to address this imbalance. According to data from the National Bureau of Statistics, in 2020, among the countries with the highest import volume of fossil fuels as the world’s main resources, the supply-demand imbalance index exceeded 60%. The unbalanced energy supply and demand structure has had a negative impact on the economic development of various regions [2]. According to the Zhang Xu research “Energy investment risk assessment of countries along China’s “the Belt and Road” initiative” by 2020 China Oil and Gas Engineering Industry Analysis Report by China Petroleum and Chemical Corporation, the external demand for fossil fuels in China exceeded 75% in 2020. From the perspective of both the concentration of energy imports and the external demand for energy, it is urgent to change China’s energy supply-demand relationship and supply-demand structure [3].

Presentation of the main material. According to the 2020 World Energy Statistical Yearbook, the

main countries along the “the Belt and Road” are rich in proven fossil energy reserves, including Saudi Arabia, Iran, Russia and Kuwait; Countries such as Russia, Iran, Qatar, and Turkmenistan have abundant proven natural gas reserves; Russia, India and other countries have abundant coal resources and proven reserves (Table 1).

It can be clearly seen from the data in the table that the major oil exporting countries along the “the Belt and Road”, such as Saudi Arabia, Iran, Iraq and Russia, have a high degree of energy supply; Russia, Iran, Qatar, Turkmenistan and other major countries along the “the Belt and Road” have a high degree of natural gas energy supply; Russia, India, Indonesia, Ukraine and other major countries along the “the Belt and Road” are rich in coal resources; In general, the supply of coal resources in major countries along the “the Belt and Road” is relatively high [3].

At present, China’s economic growth is still heavily dependent on the import of energy resources, and the energy demand of major countries along the “the Belt and Road” is still high. Ensuring the balance of energy resources demand between China and countries along the “Belt and Road” is of great strategic significance for the transformation and upgrading of China’s economy and maintaining the balance of supply and demand of China’s energy resources [4].

As shown in Table 2, China’s total crude oil imports from major countries along the “the Belt and Road” in 2020 will be 325.671 million tons; The total volume of natural gas imports from major countries along the “the Belt and Road” is 710.83 billion cubic meters; The total coal imports from major countries along the “the Belt and Road” are 229.838 million tons. Among the crude oil imports, China has the highest dependence on countries such as Saudi Arabia, Iraq, and Russia, accounting for 66.4% of

Table 1

Overview of energy resources of major countries along “the Belt and Road”

Country	Proved oil reserves / (100 million tons)	Country	Proved natural gas reserves / (trillions of cubic meters)	Country	Proved coal reserves / (10000 tons)
Saudi Arabia	420	Russia	40.9	Russia	18012365
Iran	230	Iran	32.5	India	11136200
Iraq	205	Qatar	25.8	Indonesia	3900000
Russia	190	Turkmenistan	21.6	Ukraine	3527600
Kuwait	160	Saudi Arabia	6.8	Poland	2868400
The United Arab Emirates	136	The United Arab Emirates	6.8	Kazakhstan	2680300
Kazakhstan	54	Iraq	4.2	Turkey	1313000
Qatar	43	Indonesia	3.5	Serbia	791600

Data sources: World Energy Statistical Yearbook, 2023

the crude oil imports from major countries along the route; In terms of natural gas imports, China has the highest dependence on countries such as Turkmenistan, Qatar, and Malaysia, accounting for 58.1% of the natural gas imports from major countries along the route; In terms of coal imports, China has the highest dependence on countries such as Indonesia, Mongolia, and Russia, accounting for 95.3% of coal imports from major countries along the route (Table 2).

The energy cooperation and institutional framework between China and the major countries along the “the Belt and Road” still remain in the previously signed development treaties. Only by strengthening policy communication, energy investment cooperation and energy infrastructure connectivity with major countries along the “the Belt and Road”, continuously improving the global energy supply structure, and jointly building a new green and low-carbon global energy pattern, can the contradiction between energy supply and demand be fundamentally solved.

In 2019, China strengthened consensus among several countries along the “the Belt and Road”, including Iraq, Saudi Arabia, Russia and other countries, formed a closer community of shared future in energy cooperation, committed to building an energy cooperation framework and policy mechanisms that are more in line with the interests of all parties, and contributed more Chinese power to the establishment of the “the Belt and Road” new energy strategic partnership [5]. While continuously improving the corresponding cooperation mechanism and framework, there are still problems in the energy cooperation between

China and countries along the Belt and Road, such as the top-level design needs to be improved, the energy cooperation system with countries along the Belt and Road needs to be consolidated, and the policy mechanism is not breakthrough enough.

The laws and regulations of many countries along the “the Belt and Road” need to be improved to safeguard the interests of foreign investment. At the same time, because the social system, ideology and development level of countries along the “Belt and Road” are different from those of China, China’s energy enterprises have greater resistance to go out; According to the global report on the state of national business environment, the business environment rating of several major countries along the “the Belt and Road”, including Russia, Turkmenistan, Türkiye, is lower than the horizontal line [6]. Some unfavorable factors and conditions, such as poor business environment and high investment risk rating, restrict the investment and development efforts of countries along the line. While adding risks to the going global of Chinese energy enterprises, they also hinder the sustainable and healthy economic development of some countries along the line.

With the rapid development of world economic globalization, China has increasingly close contacts with countries along the “the Belt and Road”. In order to accelerate the development of their own economies, countries have formulated corresponding economic development policies. Because countries along the Belt and Road are rich in energy resources, countries have formulated energy development and export plans suitable for their national conditions, so as to support the

Table 2

China’s energy imports from major countries along “the Belt and Road”

Country	Import situation of crude oil		Country	Natural gas import situation		Country	Coal import situation	
	Import volume	%		Import volume	%		Import volume	%
Saudi Arabia	8532.1	18.2	Turkmenistan	2503.5	25.1	Indonesia	14523.1	46.2
Russia	7832.5	16.1	Qatar	896.4	8.6	Mongolia	3825.6	13.1
Iraq	5250.6	11.3	Malaysia	721.5	7.2	Russia	3564.2	11.1
Oman	3564.1	7.5	Kazakhstan	568.3	5.6	Philippines	984.6	3.5
Kuwait	2456.9	5.2	Indonesia	485.3	4.9	Laos	20.3	0.1
The United Arab Emirates	1620.4	4.0	Uzbekistan	384.6	4.2	Kyrgyzstan	19.0	0.1
Iran	1562.3	3.9	Myanmar	356.7	4.5	Myanmar	18.0	0.1
Malaysia	1265.3	3.1	Russia	1002.6	13.6	Kazakhstan	16.1	0.1
Kazakhstan	298.3	0.9	Oman	121.3	1.2	Vietnam	8.0	0.05
Yemen	184.6	0.3	Brunei	68.1	0.7	Malaysia	4.9	0.05

Data sources: China National Bureau of Statistics

development of their own energy and promote economic development [7]. In recent energy development plans between China and countries along the Belt and Road, China has extensively engaged in energy development exchanges and cooperation with countries along the Belt and Road, mainly Kazakhstan, Russia, and Iran, with a focus on the new energy and photovoltaic industries, and continuously strengthening technological cooperation with countries along the Belt and Road. While promoting the energy development of China and the major countries along the “the Belt and Road”, there are also problems such as the need to strengthen energy development technology and lack of technological innovation.

Strengthen the top-level system design, improve the energy cooperation framework system with major countries along the “the Belt and Road”, establish a long-term mechanism for energy cooperation and development, promote the cooperation and development of new energy with countries along the “Belt and Road”, constantly replace fossil energy with clean energy, form a new pattern of energy consumption in China with clean energy as the main consumer, and create a new normal of energy supply and demand relations. China and the major countries along the “the Belt and Road”, on the premise of mutual benefit and win-win results, have continued to deepen cooperation, set up energy development cooperation organizations, developed corresponding systems, and constantly strengthened top-level dialogue, high-level exchanges in energy development and a series of exchanges and cooperation [8].

China’s energy cooperation with the major countries along the “the Belt and Road” presents an unprecedented historical opportunity. China has changed from “bringing in” to “going out”. While developing energy with the major countries along the “the Belt and Road”, Chinese enterprises should constantly improve their technical strength, upgrade the industrial chain, extend the added value, and then seize the market. Energy development is of great strategic significance for China’s cooperation and exchanges with major countries along the “the Belt and Road” and accelerating the pace of going global. On the basis of bilateral relations of energy and resource trade and energy cooperation with major countries along the “the Belt and Road”, establish bilateral energy cooperation relations that include economic exchanges, technological exchanges and people to people and cultural exchanges at different levels and platforms to achieve mutual benefit, so as to establish a deep mutual trust in energy strategies and a development environment for new energy,

lay a good foundation for new energy development and create necessary conditions for the long-term development of diversified energy resources. At the same time, attach importance to the investment risks of countries with poor credit ratings along the “the Belt and Road”, and establish a long-term mechanism for early warning and assessment of investment risks [9].

China’s main energy sources, including oil, natural gas, and coal resources, have relatively low proven reserves. Therefore, while promoting the development of conventional energy, we must strengthen the development of new energy, including wind energy, hydro energy and solar energy, gradually get rid of dependence on traditional energy, constantly optimize the energy import and export structure system, constantly explore the deep processing of energy and speed up the research and development of high-end equipment, constantly extend the industrial chain of energy development, strengthen environmental governance, focus on environmental governance and ecological restoration in areas where resources and energy are exploited, make full use of a series of emerging technologies such as “Internet plus”, strengthen the rational development of resources, organically combine information technology with energy development, and accelerate the implementation of energy utilization index system and energy conservation and emission reduction technologies that meet international leading standards in society, so as to comprehensively create a resource and environment-friendly type The society has laid a solid foundation [10].

While the major countries along the “the Belt and Road” continue to speed up their energy exports, the competition for energy development and utilization is also becoming increasingly fierce. In the prospect of increasingly difficult energy resources development, stable energy exploitation and supply is crucial to the energy supply and demand structure of countries around the world. Building high-quality energy enterprises with high-end mining technology and advanced mining energy patents is an important way for China to gradually step onto the world stage and broaden its industrial development path. Chinese energy enterprises should continue to strengthen technological innovation, strengthen technological cooperation and information sharing between energy enterprises and fields, so that Chinese energy enterprises can better participate in the competition in the world energy market. The project funds related to the “the Belt and Road” should vigorously support Chinese energy enterprises to go global, give necessary help in terms of funds and policies, and create a

community of interests with multi linkage and coordinated development.

Conclusions. Energy cooperation is a key cooperation area of the “the Belt and Road” construction framework advocated by China. In the face of the challenges of traditional energy depletion, new energy development and security, and energy development transformation with countries along the “the Belt and Road”, China adheres to the pattern of a community of common destiny of “you have me, you have me”, and continues to deepen energy development exchanges and cooperation with countries along the “Belt and Road”. Deepening China’s energy cooperation with countries along the Belt and Road will undoubtedly promote them to open up a new path for regional energy and environmental governance, as well as global energy development and upgrading.

References:

1. Zhang Suoxu (2021) Research on Energy Cooperation between China and Countries along the “the Belt and Road”. *Land and Resources Intelligence*, no. (02).
2. Nie Aiyun, He Xiaogang (2018) China’s “the Belt and Road” investment: progress, challenges and countermeasures. *International Trade*, 2018, no. (12).
3. Zhang Xu (2020) Energy investment risk assessment of countries along China’s “the Belt and Road” initiative. *East, West, North, South*, no. (03).
4. Meng Yiming (2019) Problems and Countermeasures of Economic and Trade Cooperation between China and Countries along the “the Belt and Road”. *Development Research*, no. (06).
5. Wang Juanjuan, Zhang Guanhui (2019) Exploration of space for economic cooperation between China and countries along the “the Belt and Road”. *Northeast Asian Economic Research*, no. 3 (06).
6. Yang Lulu (2020) Opportunities and challenges faced by China EU new energy cooperation in the context of the “the Belt and Road”. *Business Exhibition Economy*, no. (14).
7. Jiang Anyin, Liu Bo. The right to energy development: rethinking on promoting high-quality development of energy cooperation along the “the Belt and Road”. *Journal of Chongqing University (Social Sciences Edition)*. Available at: <http://kns.cnki.net/kcms/detail/50.1023.C.20201222.1024.002.html>
8. Ji Qin, Yang Jianping (2019) Bibliometric analysis of China’s energy cooperation research trend under the “the Belt and Road Initiative”. *Chinese market*, no. (35).
9. Jiang Lu, Yu Lu, Xing Ran, Chen Xingpeng, Xue Bing (2020) Analysis of energy geographical pattern and spatial characteristics of countries along the “the Belt and Road”. *Journal of Liaoning University (Natural Science Edition)*, no. 47 (01).
10. Yu Xiaozhong, Liu Li (2020) Construction of cooperation mode of international energy industrial parks under the “the Belt and Road” initiative taking Central Asia as an example. *Exploration of Economic Issues*, no. (02).

Анотація. Енергетика – основа економічного розвитку країни. Китай є основним постачальником і споживачем енергії з постійним зростанням попиту на енергію, що призводить до недоліків у стабільному її постачанні та серйозних проблем, таких як залежність від імпорту, що серйозно впливає на енергетичну безпеку країни. Країни «The Belt and Road» мають достатні енергетичні ресурси, що створює потенціал розширення енергетичного співробітництва з Китаєм. Дуже важливо побудувати співтовариство спільного енергетичного кола з країнами вздовж «The Belt and Road», побудувати диверсифіковану енергетичну стратегічну систему та розширити ланцюжок виробництва та трансформації енергії для сприяння енергетичній співпраці між Китаєм і країнами уздовж «the Belt and Road». У сучасних умовах глобалізації та економічного розвитку управління енергетичним розвитком стало важливим питанням розвитку національної економіки Китаю. Розуміння відповідних концепцій Дослідження та удосконалення теорії управління енергетичним розвитком можуть допомогти в прийнятті управлінських рішень, підвищити ефективність діяльності товаровиробників та посилити стійкість китайських територій. Ця стаття детально досліджує теоретичні основи та практичне застосування управління енергетичним розвитком, маючи на меті надати корисні рекомендації та довідкові матеріали для осіб, які приймають рішення щодо інвестицій в енергетичну сферу шляхом визначення основних понять, аналізу основ теорії і методів дослідження. Так, було представлено відповідні концепції та основні проблеми управління енергетичними інвестиціями та теорії економічного зростання сільських територій шляхом інвестування в енергетичну сферу. Було зібрано різні погляди класичної теорії економічного зростання та розвитку сільських територій; визначені основні перешкоди розвитку енергетичного інвестування, включаючи державний макроконтроль на різних етапах регіонального розвитку.

Ключові слова: «Один пояс, один шлях», енергетичні інвестиції, співробітництво, Китай, сталий розвиток, енергетичний розвиток.