Analysis of China-Myanmar Energy Interconnection and Trade Cooperation via AHP-SWOT Approach

Tailin Xu[a], Tao Shi*

Yunnan International China Southern Power Grid, Kunming, China

[a]taitai8422@163.com, *2522763567@qq.com

Abstract. Since the initiation of one belt one road was firstly proposed by China, it have attracted worldwide attention. International energy cooperation is critical in this initiation. Myanmar occupies a unique geographical advantage among the countries along the belt one road, and the construction of power grids is an important part of the belt one road. However, there is no any research concerning about the energy cooperation between China-Myanmar under the initiation of one belt one road. This paper aims to provide a comprehensive analysis on China-Myanmar energy cooperation under one belt one road initiative. Firstly, the current status of the two countries' energy systems is investigated to show their motivations for cooperation. Secondly, the background, energy development, planning, prospects, and policies of China and Myanmar in the one belt one road cooperation are analyzed. Then, strengths-weaknesses-opportunities-threats (SWOT) method from the strength and weakness in internal factors and opportunities and threats in external factors are applied to combine with political-economical-social-technological (PEST) method considering the aspects of politics, economic, society, and technology for analyzing the development prospects of China-Myanmar energy cooperation. And the impact of these factors on the formulation of national-level strategies is evaluated.

Keywords: SWOT-PEST analysis, AHP-SWOT analysis, China-Myanmar cooperation, One Belt One Road energy policy

1 INTRODUCTION

The Silk Road Economic Belt and the 21st-Century Maritime Silk Road are proposed by president of China, Xi Jinping, in September 2013, is also called the One Belt One Road (OBOR) initiative[1]. Cross-border cooperation and investment between China and Myanmar started as early as the early stage of the Belt and Road Initiative, and many achievements have been made, while some projects have been suspended. By analyzing the reasons behind these different outcomes, the way can be paved for future projects. As the global economic and technological landscape is changing, China and Myanmar have entered a new stage of the Belt and Road development, and Myanmar is expected to become the first potential country for China's energy financing related projects. However, there are still some economic disparities and long-standing political

A. Haldorai et al. (eds.), *Proceedings of the 2024 3rd International Conference on Artificial Intelligence, Internet and Digital Economy (ICAID 2024)*, Atlantis Highlights in Intelligent Systems 11,
https://doi.org/10.2991/978-94-6463-490-7_21

and social problems that need to be addressed, which will undoubtedly require joint efforts by both sides.

Through literature review and summary, this paper combines the SWOT-PEST analysis method and AHP-SWOT analysis method to study the development of China-Myanmar energy cooperation in the Belt and Road. Literature research mainly refers to a large number of literature including China-Myanmar electricity, energy cooperation, international policy, international trade, jurisprudence and other disciplines to obtain preliminary information. Then, combined with the latest data and information published by the Ministry of Electricity and Energy (MOEE) of Myanmar and the China's official websites of the Belt and Road Portal and so on, this paper makes an in-depth study on the problems of China-Myanmar cooperation in electricity and new energy. By summarizing the above data and combining with international energy cooperation cases, this paper analyzes the shortcomings of China and Myanmar and puts forward complementary suggestions.

2 CURRENT SITUATION OF CHINA-MYANMAR ENERGY SYSTEM

2.1 Current situation of Myanmar energy system

The Myanmar power grid consists of the national interconnected power grid and isolated power grids in remote areas, mainly including four voltage levels of 230kV, 132kV, 66kV and 33kV and four main energy sources: hydropower, natural gas, coal and diesel. Hydropower has the highest installed capacity (3,221 MW) with 27 hydroelectric power stations; This was followed by gas (2,142MW), with 19 gas power stations; Finally, coal power (120MW), with only one coal power station.

In addition, Myanmar continues to build new power plants, including eight hydroelectric plants with a total capacity of 1,737.6 MW, several natural gas plants with a total capacity of 449.9MW, and three solar plants with a total capacity of 470MW.

Despite its abundant resources, Myanmar's electricity supply is far from meeting its economic goals[2]. Myanmar's national electricity coverage is only 54 percent, both its generation and transmission technology are far behind the world average, and there is also a huge mismatch between generation resources and loads. To make matters worse, the existing power equipment is aging and may suffer the risk of huge losses and serious accidents. There is no doubt that the lack of power supply has become a bottleneck for Myanmar's development, but the Ministry of Electricity and Energy is still unable to provide sufficient investment funds and technical support to solve the problem[3].

2.2 Current situation of China energy system

With the deepening of China's reform and opening up and the rapid development of the economy, the demand for electricity has increased significantly, which has been followed by continuous improvement and development of technology and infrastructure[4]. Through cooperation with and learning from other countries, Chinese energy companies have accumulated rich experience in the design, construction and operation of large-scale power systems with complex transmission and distribution networks[5]. Today, China has developed its own energy industry, ranking first in the world in installed capacity since 2011, with the highest voltage level and operating efficiency.

In the past 70 years, China's power industry has experienced from small to large, from weak to strong development[6, 7]. Today, China's power system has been the world's largest for eight consecutive years, with not only the widest network coverage, but also the most efficient distribution of energy resources and operation efficiency. The salient features of China's energy system are as follows:

- Large installed capacity and diverse ways of generating electricity.
- Growing power demand and high-speed network expansion.
- The electrification rate is leading in Asia.
- High level of reliability.
- Advanced technology and power facilities.

Although China is rich in renewable resources, such as biomass, solar, wind, tidal, and geothermal energy, its energy resources are widely distributed and unevenly distributed across the country, making mining and extraction difficult and costly to develop. Therefore, China has been seeking alternatives to international cooperation to deal with the foreseeable energy shortage problem and growing environmental problems.

3 CHINA-MYANMAR ENERGY COOPERATION UNDER THE BELT AND ROAD INITIATIVE

3.1 Non-renewable energy projects

The main cooperation between China and Myanmar regarding non-renewable energy is crude oil and natural gas pipeline projects. If China remains highly dependent on oil from the Middle East and Africa, as well as natural gas from Russia, then China will face the risk of a single energy mix. At the same time, with the advancement of Myanmar's offshore gas technology, many new gas fields are expected to be developed, while the domestic gas consumption demand is far less than the production. Based on this situation, Myanmar will become an ideal partner for China[8].

The crude oil pipeline, built by a joint venture between Myanmar and China with a total investment of 1.5 billion US dollars, is 771km long and was put into service in 2015, transporting 22 million tons of oil. The natural gas pipeline connecting China, Myanmar, South Korea and India, with a total length of 793 kilometers and a total investment of 10.4 billion US dollars, was completed on July 28, 2013, delivering 12 billion cubic meters of natural gas to China annually.

3.2 Renewable energy projects

The renewable energy cooperation between China and Myanmar is mainly hydropower, as shown in Table 1. In January 2018, Myanmar's Ministry of Electricity and Energy proposed the 500kV Myanmar-China power interconnection project and Bangladesh-China-Myanmar interconnection project. The former starts from Yunnan (China) to Faraj (Myanmar) with a total capacity of 1000MW.

Table 1. China-Myanmar hydroelectric power generation cooperative projects

Number	Power station name	Installed capacity(MW)	Location	Date of construction
1	Baluchaung No. 2	168	Kachin State	1954-1970
2	Zawgyi No.1	18	Shan state	1993
3	Zaungtu	20	Bago	1994
4	Zawgyi No.2	12	Shan state	1995
5	Paunglaung	280	Mandalay	1997
6	Thaphanseik	30	Mandalay	1998
7	Mone Chaung	75	Magway	1998
8	Yeywa	790	Mandalay	2001
9	Shweli No.1	600	Shan state	2002
10	Keng Tawng	54	Shan state	2003
11	Kabaung	30	Bago	2003
12	Myo Gyi	30	Shan state	2006
13	Nan Cho	40	Mandalay	2006
14	Dapein No. 1	240	Kachin State	2008
15	Thauk Ye Khat No. 2	120	Bago	2012

16	Chipwinge	99	Ka-chin State	2013

4 SWOT-PEST Analysis and AHP-SWOT analysis

4.1 SWOT-PEST analysis

SWOT analysis was proposed by Professor Heinz Weihrich in 1980, based on the competition theory of competitive strategy expert Michael Porter and the analysis based on enterprise's creation on value, resources and capabilities of management (competency school). SWOT analysis is divided into internal factor analysis and external factor analysis of organizational structure. The internal factors of SWOT are analyzed as Strength (S) and Weaknesses (W). The external factors of SWOT are analyzed as Opportunities (O) and Threats (T)[9].

PEST analysis law is a macro environmental analysis method, which includes the protection, investigation, inspection and monitoring of the environment and business, so as to find problems and provide decision basis for businesses. Political (P) environment analysis mainly includes the political system, the political situation, the attitude of the government, and the formulation of laws and regulations. Economic (E) environment analysis includes key strategic factors such as GDP, fiscal and monetary policies, exchange rates, market mechanisms and demand, human and financial resources. The most important factors in the analysis of Social (S) environment are human background, religious belief and language barrier. Technological (T) environment analysis includes the latest technologies, inventions and quality[10].

This section combines SWOT analysis with PEST analysis to study how the current situation and potential changes affect China-Myanmar energy cooperation, as shown in Table 2.

Table 2. Table of the SWOT-PEST matrix

THE SWOT-PEST MATRIX	Internal factor		External factor	
	Strength(S)	Weakness(W)	Opportunity(O)	Threat(T)
Politics(P)	SP	WP	OP	TP
Economics(E)	SE	WE	OE	TE
Society(S)	SS	WS	OS	TS
Technology(T)	ST	WT	OT	TT

Strength analysis

In politics, in 2017, Myanmar began to implement a new investment law aimed at promoting and facilitating foreign and domestic investment. During the state visit of Chinese President to Myanmar in 2020, the two sides reached agreement and signed 29 cooperation projects including energy, electricity, transportation, infrastructure construction and agriculture. As a result, there are fewer obstacles on energy cooperation between China and Myanmar.

In economics, Myanmar is an emerging potential body for economic development, and both China and Myanmar have innate geographical advantages, which have laid an irreplaceable advantage for the economic development of China and Myanmar.

In society, China and Myanmar have a long history of cooperation in areas such as education, business and infrastructure construction, and these positive outcomes will pave the way for further China-Myanmar cooperation projects. In addition, in order to strengthen international personnel training and technical education exchanges between countries, the Chinese government has set up a scholarship program for studying in China.

In technology, China and Myanmar are technically complementary in grid construction and energy market development. China is leading the world in the development of advanced technologies in electricity, transnational networking, energy, construction and manufacturing.

Weaknesses analysis

In politics, Myanmar's long-standing ethnic conflicts are a major obstacle to its co-operation with other countries. In addition, there are non-governmental organizations from different countries developing in Myanmar, which has a certain impact on China-Myanmar cooperation and project investment.

In economics, despite rapid economic growth, Myanmar remains one of the poorest countries in the world, ranking 73rd in the 2019 World rankings. The huge economic disparity has made investment in Myanmar less profitable for other countries, and the returns for host countries like China have become ambiguous.

In society, the misalignment of interests between the central government and local ethnic groups in Myanmar has been a long-standing and unresolved problem to date. That has made broad agreements on energy co-operation difficult and made Chinese investment in Myanmar less attractive.

In technology, most Burmese are directly or indirectly engaged in agriculture, while they lack experience in equipment manufacturing, technical maintenance and enterprise management, and there is a serious shortage of qualified engineers in all respects.

Opportunities analysis

In politics, the Chinese government attaches great importance to the 2030 Agenda for Sustainable Development and has demonstrated its ambition in the upcoming 14th Five-Year Plan (2021-2025) to reach new economic growth points. On the other hand, the Myanmar Energy Master Plan puts its long-term interests first by ensuring sustainable development of the energy sector and sustainable protection of the environment.

In economics, due to COVID-19 and the Sino-U.S. trade war, geopolitical tensions are reversing globalization, while the regional trading system will be favored, so more attention will be paid to the Belt and Road, and also bring more opportunities for China-Myanmar energy cooperation.

In society, the uncertain political environment has made people aware of the resilience and reliability of the power system, prompting both China and Myanmar to search for reliable energy sources and build strong power networks with the strength of close and friendly neighbors.

In technology, as one of the fastest growing countries, the Government of Myanmar has taken steps to meet international standards in engineering education with a view to ensuring that engineers have recognized professional competencies to facilitate their rapid development.

Threats analysis

In politics, in the post-COVID-19 crisis era, under the pressure of the Sino-U.S. trade war, the political need to ensure social stability, energy security and domestic economic development may reduce the willingness of Chinese policymakers or investors to pay for the Belt and Road construction.

In economics, governments and international organizations seek energy cooperation in response to growing energy trade and globalization. However, ongoing economic conflicts, such as the trade war between China and the United States, have severely damaged the global economy, while uncertainty about the final outcome has also hindered the willingness of business and international investment, especially in the construction of basic services such as power grids.

In society, In the wake of the COVID-19 outbreak, almost all public places across China have been closed and people are not allowed to go outside. Although China's economy has begun to recover, extensive international cooperation is still weak, coupled with the uncertainty of the foreign trade market, face-to-face communication and long-distance transportation are restricted to a certain extent.

In technology, Energy cooperation along the Belt and Road involves a lot of infrastructure construction and largely depends on physical links. However, travel restrictions and transit restrictions on foreign workers have disrupted technical support and supply chains on site. The threat posed by insufficient technology will limit China-Myanmar energy cooperation to a large extent.

4.2 AHP-SWOT analysis

The Analytic Hierarchy Process (AHP) was proposed by Professor T.L. Saaty in the 1970s. This analysis method mainly extracts the components of the problem, forms a hierarchical model according to the association and membership relationship, compares the hierarchical elements, determines the importance of the problem elements and ranks the analysis and judgment method[11].

AHP-SWOT basic steps

PEST-SWOT analysis has been used above to analyze the policy, economic, social and technical strength, weaknesses, opportunities and challenges of China-Myanmar energy cooperation under the Belt and Road Initiative. In the following, quantitative analysis of qualitative elements will be carried out through Analytic Hierarchy Process (AHP), and specific steps are shown in Fig. 1.

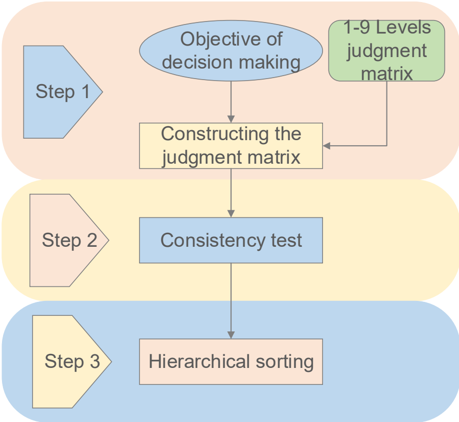

Fig. 1. Process diagram of analytic hierarchy process

Based on Analytic Hierarchy Process (AHP), the strengths (S), weaknesses (W), opportunities (O) and challenges of the criterion layer are combined with policy (P), economic (E), social (S) and technology (T) analysis to select the computational matrix group. They are grouped into: Group S "friendly political relations between China and Myanmar", "innate geographical advantages", "internationalization of business and technical talent cultivation between China and Myanmar", "China's advanced technological level", Group W "ethnic conflicts in Myanmar", "gap between investment and income", "balance of interests between the Myanmar government and the civilian and military forces", "Myanmar's demand for equipment and technology", Group O "China and Myanmar complement energy development goals", "China-Myanmar trade growth is full of hope", "targeted development plan", "Myanmar has large space for Internet technology and equipment development" and Group T "Influence of political factors", "economic conflicts", "weak international cooperation", "backward technology and infrastructure construction" are shown in Table 3.

In order to numerically analyze the elements of China-Myanmar energy cooperation, establish the criterion level judgment matrix model A, S (strength) judgment matrix, W (weakness) judgment matrix, O (opportunity) judgment matrix, and T (threat) judgment matrix of China-Myanmar energy cooperation by using the 1-9 numerical representation, and the judgement matrices are shown in Table 4 and Table 5. Finally, in order to verify the consistency test and weight analysis of China-Myanmar energy cooperation, the matrix of each level is judged and sorted according to the stratification analysis, as shown in Table 6.

Table 3. AHP hierarchical structure model of China-Myanmar energy cooperation

Target layer	Criterion layer	Index layer

China-Myanmar energy cooperation	Strength(S)	SP: Friendly political relations between China and Myanmar
		SE: Innate geographical advantages
		SS: China and Myanmar cultivate international business and technical talents
		ST: China's advanced technology level
	Weakness(W)	WP: Ethnic conflict in Myanmar
		WE: The gap between investment and return
		WS: The balance of interests between the Myanmar government and the ethnic armed forces
		WT: Myanmar's need for equipment and technology
	Opportunity(O)	OP: China and Myanmar have complementary energy development goals
		OE: The growth of China-Myanmar trade is full of hope
		OS: Targeted development planning
		OT: Myanmar has a large space for the development of Internet technology and equipment
	Threat(T)	TP: Influence of political factors
		TE: Economic conflict
		TS: Weak international cooperation
		TT: Technology and infrastructure are lagging behind

Table 4. Criterion layer judgment matrix of China-Myanmar energy cooperation

A	**S**	**W**	**O**	**T**
S	1	3	2	3
W	1/3	1	3	2
O	1/2	1/3	1	3
T	1/3	1/2	1/3	1

Table 5. SWOT of China-Myanmar energy cooperation judgment matrix

S	**SP**	**SE**	**SS**	**ST**	**W**	**WP**	**WE**	**WS**	**WT**
SP	1	1	2	5	**WP**	1	3	7	4
SE	1	1	3	2	**WE**	1/3	1	3	2
SS	1/2	1/3	1	2	**WS**	1/7	1/3	1	3
ST	1/5	1/2	1/2	1	**WT**	1/4	1/2	1/3	1
O	**OP**	**OE**	**OS**	**OT**	**T**	**TP**	**TE**	**TS**	**TT**
OP	1	5	2	3	**TP**	1	3	2	4
OE	1/5	1	3	2	**TE**	1/3	1	2	3
OS	1/2	1/3	1	2	**TS**	1/2	1/3	1	2
OT	1/3	1/2	1/2	1	**TT**	1/4	1/3	1/2	1

Table 6. Strength(S) of China-Myanmar energy cooperation judgment matrix

Objective of decision making	Criterion layer	CR	λ_{max}	weight	Index layer	CR	λ_{max}	Index layer weight	weight
China-Myanmar energy cooperation	S	0	4	0.4616	SP	0	4	0.3704	0.1710
					SE			0.3704	0.1710
					SS			0.1852	0.0855
					ST			0.0740	0.0342
	W			0.1538	WP	0	4	0.5739	0.0891
					WE			0.1931	0.0297
					WS			0.828	0.0127
					WT			0.1448	0.0223
	O			0.2308	OP	0	4	0.4918	0.1135
					OE			0.0984	0.0227
					OS			0.2459	0.0568
					OT			0.1639	0.0378
	T			0.1538	TP	0	4	0.4800	0.0738
					TE			0.1600	0.0246
					TS			0.2400	0.0369
					TT			0.1200	0.0185

The geometric mean of the rows of the matrix is

$$\bar{w}_i = \sqrt[n]{\prod_{j=1}^{n} a_{ij}} \quad i,j = 1,2,3,4 \tag{1}$$

$$w_i = \frac{\bar{w}_i}{\sum_{i=1}^{n} \bar{w}_i} \quad i,j = 1,2,3,4 \tag{2}$$

The maximum eigenvalue is

$$\lambda_{\max} \approx \bar{\lambda} = \frac{1}{n} \sum_{i=1}^{n} \frac{\left(\sum_{j=1}^{n} a_{ij} w_j\right)}{w_i} \quad i,j = 1,2,3,4 \tag{3}$$

The consistency indicator (CI) of the judgment matrix is

$$CI = \frac{\lambda_{\max} - n}{n-1} \tag{4}$$

The consistency ratio (CR) of the judgment matrix is

$$CR = \frac{CI}{RI} \tag{5}$$

where, random index (RI) is the average random consistency index, $\lambda_{\max}$ is the maximum eigenvalue, w is the weight, and n is the number of judgment elements. When CR<0.1, the degree of consistency of the judgment matrix is considered to be within an acceptable range; When CR>0.1, it is considered that the judgment matrix does not meet the consistency requirements. And through the above calculation, the consistency ratio CR of all matrices is less than 0.1, so the consistency test meets the requirements and the analysis results are reliable.

Strategic positioning of China-Myanmar energy cooperation

It follows from Table 6 that $S = 0.4616$, $W = 0.1538$, $O = 0.2308$ and $T = 0.1538$. With TO as the horizontal axis and WS as the vertical axis, the x and y coordinate systems are constructed, and O and S are the positive values of the x and y axes, respectively, to construct the strategic map of China-Myanmar energy cooperation. In addition, the coordinates of the center of gravity used for the China-Myanmar energy cooperation strategy can be calculated by the following equations:

$$x_g = \frac{\sum_{i=1}^{3} x_i^2 y_{i+1} + x_4^2 y_1 - \sum_{i=1}^{3} x_{i+1}^2 y_i - x_1^2 y_4 + \sum_{i=1}^{3} x_i x_{i+1} y_{i+1} + x_4 x_1 y_1 - \sum_{i=1}^{3} x_i y_{i+1} y_i - x_4 y_1 y_4}{3\left(\sum_{i=1}^{3} x_i y_{i+1} + x_4 y_1 - \sum_{i=1}^{3} x_{i+1} y_i - x_1 y_4\right)} \tag{6}$$

$$y_g = \frac{\sum_{i=1}^{3} x_i y_{i+1}^2 + x_4 y_1^2 - \sum_{i=1}^{3} x_{i+1} y_i^2 - x_1 y_4^2 + \sum_{i=1}^{3} x_i y_i y_{i+1} + x_4 y_4 y_1 - \sum_{i=1}^{3} x_i x_{i+1} y_i - x_4 x_1 y_4}{3\left(\sum_{i=1}^{3} x_i y_{i+1} + x_4 y_1 - \sum_{i=1}^{3} x_{i+1} y_i - x_1 y_4\right)} \tag{7}$$

Based on the Eq. (6) and Eq. (7), the focus of strategic pattern can be calculated coordinates $P(x_g, y_g) = (0.0973,\ 0.0645)$, as shown in figure 2. Therefore, the advantages of China-Myanmar energy cooperation outweigh the disadvantages and the opportunities outweigh the threats. To sum up, the current internal and external environment is conducive to the development of China-Myanmar energy cooperation under the Belt and Road.

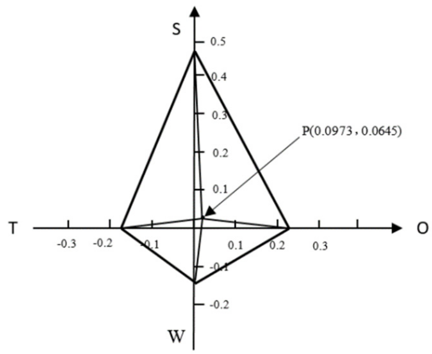

Fig. 2. Strategic map of China-Myanmar energy cooperation

Secondly, from the perspective of criterion layer units, the weights of China-Myanmar energy cooperation from high to low are S=0.4616, O=0.2308, T=0.1538, W=0.1538. Therefore, it can be seen that on the road of China-Myanmar energy cooperation development, we should focus on grasping advantages and seeking opportunities, followed by weaknesses and threats.

Finally, through the calculation of elements of different standard layer weight and center of gravity of the $P(x_g, y_g)$ surrounded by the weight of the triangle area, could get out of the $S_{\Delta SPO} = 0.0812$, $S_{\Delta SPT} = 0.0865$, $S_{\Delta OPW} = 0.0324$, $S_{\Delta TPW} = 0.0379$, $S_{\Delta SPT} > S_{\Delta SPO} > S_{\Delta OPW} > S_{\Delta TPW}$. Therefore, the strategic development path of China-Myanmar energy cooperation should be based on SE and SP, and OP and WP should be implemented by merging.

5 CONCLUSION AND RECOMMENDATIONS

In politics, it is suggested that Myanmar accelerate the construction of the energy market while expanding the power grid, as Myanmar is currently playing a relatively passive role in China-Myanmar cooperation. The energy market is able to unleash the potential of the entire power generation, transmission and distribution sector, and it will provide Myanmar with more price advantages to enhance its competitiveness and attractiveness in energy investment

In economics, while the final outcome of the Sino-U.S. trade war has yet to unfold, both China and Myanmar should prepare for the post-COVID-19 and trade postwar era. Although the two countries face different pressures, the side effects of failing to solve their respective problems will be exaggerated when they engage in close energy cooperation. It is suggested that China and Myanmar reconsider their respective roles in energy cooperation in the new era and tap the complementary potential in economic activities.

In society, China should take people-to-people relations seriously and respect local people's sense of ownership. In addition to infrastructure construction, deeper exchanges and cooperation projects should compensate for the poor image of some inexperienced Chinese investors. It is recommended to increase government-funded or privately supported internships and provide opportunities for engineer training and visiting scholar programs for both China and Myanmar to strengthen people-to-people connections.

In technology, the technologies involved in China's New Infrastructure Construction plan are not affected by the side effects of COVID-19 because they are independent from face-to-face contact. Energy cooperation should leverage this communication technology to adapt to the post-COVID-19 era.

Energy cooperation is one of the most important components of the Belt and Road Initiative, and both Myanmar and China can realize their ambitions in the power sector and sustainable development through the Belt and Road Initiative cooperation. In the face of uncertain global political and economic factors, practical solutions are needed to achieve win-win cooperation. There is no doubt that the success of China-Myanmar energy cooperation will not only promote the economic development of the two countries themselves, but also set a new example for future international energy cooperation.

REFERENCE

1. Yang Zijie, Huang Dong, Wang Yanzhen. Measuring the bilateral energy security cooperation sustainability between China and its neighboring countries based on the national energy security level. Sustainability, 2023, 15(2):1339.
2. Cheon Yu, Yunseop Hwang. A study on Myanmar power marker for Korean firms - focused on CHP, CDM, MDB. International Area Studies Review, 2016, 20(4):37-56.
3. Bo Yang, Thidar Swe, Yixuan Chen, et al. Energy cooperation between Myanmar and China under One Belt One Road: current state, challenges and perspectives. Energy, 2020, 215(B):119130.
4. Zhang Lizi, Xu Chuanlong. Electricity market construction experience of major provinces of energy in China. Electric Power, 2017, 50(4):7-10.

5. Zhang Gexing, Xia Dawei. Study on technical efficiency and total factor productivity of transmission and distribution grid in China: analysis based on panel data of 24 provincial power companies from 2005 to 2009. Journal of Finance and Economics, 2012, 38(10):112-122.
6. Wang Shuo. A brief introduction to China electric power history research. Journal of North China Electric Power University (Social Sciences), 2020, 4:72-81.
7. Bai Mei. 70 years of development achievements of new China's power industry. Price: Theory & Practice, 2019, 5:4-9.
8. Liu Wei, Hou Lijuan, Wang Yashu. The outlook for Myanmar's gas market and the investment suggestion for Chinese enterprises. International Petroleum Economics, 2019, 27(8):90-98.
9. Zhang Jinshan, Dong Guang, Wang Wei. Stady on gain way of competitive intelligence based on SWOT analysis. Information Science, 2009, 5:672-675,679.
10. Han Xingyong, Du Xianchen. Contrastive analyses on macro-environment of marine industry in U.S and China with PEST model. Chinese Agricultural Science Bulletin, 2014, 30(20):42-46.
11. Shen Hongtian, Ma Guimin, Yi Zheng, et al. Study on urban renewal strategy for construction of historical and cultural type of metro stations in urban central districts of major cities based on AHP-SWOT analysis: a case study of Tianjin Heping Road Station. Areal Research and Development, 2019, 38(6):68-73.