



# Risk and Benefit Analysis of China's Foreign Direct Investment in the Energy Sector: Case Study of the Belt and Road Initiative

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## ABSTRACT

Since 2011, China has been the world's largest energy consumer. The industrial sector uses two-thirds of the energy consumed in China. The main reason for investment in energy is that China is a net importer of energy, especially oil. The impact of Chinese foreign investments and the energy sector, which is the largest of the individual sectors, are the main subjects of the analysis of the presented paper. In the paper, we used the WoS viewer program to perform a bibliometric analysis of authors, countries, and keywords that deal with FDI. Subsequently, we used various scientific methods, such as the method of observation, method analysis, synthesis, comparison, exploration and explanation, to analyse Chinese investments that flow into multiple sectors worldwide, but especially into the countries participating in the Belt and Road Initiative and into the energy sector from 2013 to the present. As part of the Belt and Road Initiative, China invests in various projects in the form of "loans" and, in many cases, creates debt traps that allow China to seize the assets of participating countries. In this paper, we focused on the energy sector and its development so far within the given initiative, and we also defined what the initiative should focus on within renewable resources. China's energy investments include oil, hydropower, alternative energy, natural gas, and coal. The sharp drop in Chinese investment after 2019 was caused by the COVID-19 pandemic. To conclude, although energy has remained China's primary sector for investment within the BRI regions, Chinese capital has gradually diversified into sectors such as transportation, real estate, technology and innovation, and tourism.

**Keywords:** Energy Sector, Foreign Direct Investment, Belt and Road Initiative, Benefit and Risk, Sustainability

**JEL Classifications:** F21, G11, G15

## 1. INTRODUCTION

Foreign direct investments enable several positive trends, access to new lucrative markets, significant transfer of modern technologies, production of final products with higher added value, secondary development of small and medium-sized businesses or capital inflow. The Belt and Road initiative is one of the world's most significant initiatives, in which 151 countries participate. There are only two counter-initiatives from the West: PGII (Partnership for Global Infrastructure and Investments) and IPEF (Indo-Pacific Economic Framework), which were created only in 2022 at the G7 summit. The Belt and Road Initiative

has the most extended history, so we chose it as the subject of a deeper analysis.

One of the most significant infrastructure initiatives ever created is China's Belt and Road Initiative (BRI), often known as the Modern Silk Road (MERICS, 2022). The massive investment and development programs launched by President Xi Jinping in 2013 were initially planned to build physical infrastructure to connect East Asia and Europe (Wang, 2022). China's economic and political power has increased dramatically over the past 10 years because of project expansion into Africa, Oceania, and Latin America (Wu et al., 2019). The vision of the modern silk road

mainly includes building infrastructure on a megalomaniac scale. The BRI represents a geopolitical project through which China wants to become a global hegemon (Zhang, 2022). BRI packages China's growing global presence for an international audience. It is a clever marketing strategy to reposition China's relationship with the world and present itself as a provider of global public goods (Mardell, 2023).

The BRI is becoming the focus of China's foreign policy. But in most participating countries, the risk of unsustainable debt is created since Chinese investments are mainly in the form of loans (Xie and Hua, 2023; Yukhanaev et al., 2014). These investments are financed by China's state-owned banks, commercial banks, and the State Investment Fund. However, these countries had no choice because, apart from China, no one was willing to invest in them (Latief and Lefen, 2019; Dunning, 2000; Liang et al., 2021). However, the main objective of the BRI is not to create debt traps or improve the participating countries' economies but to drive the momentum of economic growth in China and support the domestic market (ASEAN, 2019).

According to Chow-Bing (2022), the BRI has five goals: Policy coordination, infrastructure connectivity, free trade, integration of financial systems, and connecting cultures. Connecting and building new infrastructure will promote the exchange of capital and goods between China and participating countries. Policy coordination and cultural integration will provide a political and social basis for investment in the infrastructure. In practice, the BRI is tasked with building land, sea, and air routes, taking the connectivity between BRI participants to a higher level (Hussain et al., 2020; Jiang and Minhe, 2016).

This will mean trade and investment facilitation (Huang, 2022), creating a network of free trade areas, maintaining closer economic ties, deepening political trust, and strengthening cultural exchange. Although China has stated that cultural exchange will be the official goal of the BRI, the reality is quite different. Internal "globalisation" does not exist in China; the only exception is the economy (Jiang and Ao, 2023). Although it tries to spread its culture and ideas towards the West, it does not accept outside ideas, cultures, or opinions.

The current regime in China can be compared to the dystopian novel 1984 by George Orwell. The initiative also includes the development of economic corridors to increase the quality of the infrastructure and the connectivity of the international logistics network (Li et al., 2022). The "Economic Belt" is focused on land infrastructure, and the "Maritime Road" is its maritime version. China intends to create its era of globalisation. China has excess production capacity; it invests in the development of countries that will eventually demand their goods. The BRI leverages China's expertise in infrastructure development. It uses it to forge closer ties with other countries, create trade channels for China, and help failing economies by providing infrastructure that will ultimately benefit China (Granneman and Van Dijk, 2015; Yu, 2019; Yuan and Tan-Mullins, 2023). Researchers have repeatedly debunked the idea of debt traps through various investigative reports. However, China and other interested nations are making hazardous loans for projects

that are likely to fail or are not financially viable without sufficient cost-benefit analysis (Bae, 2020).

The BRI has been described as a Chinese Marshall Plan, a state-sponsored campaign for global dominance, a stimulus package for a slowing economy and a massive marketing campaign for Chinese investment around the world (Kuo and Kommenda, 2018). This is an attempt to connect Asia with Africa and Europe through land and sea links to improve regional integration, increase trade and boost economic growth (EBRD, 2013). Such an initiative can be seen as part of China's strategy to reshape the country as a socially responsible nation (Majerova et al., 2024). However, it also has a political side in securing votes for China in international organisations.

## 2. METHODOLOGY

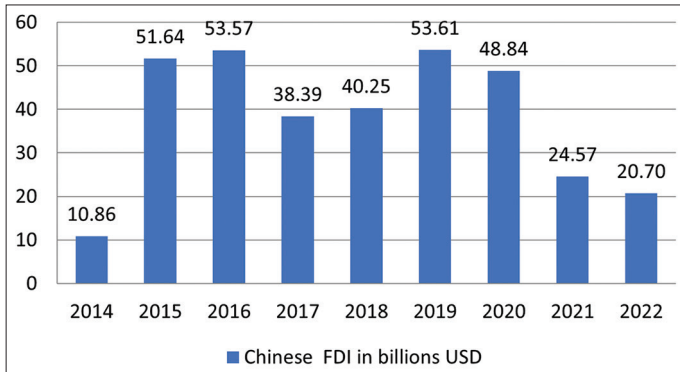
The paper included a methodology for summarising data and sources related to the topic of the translating contribution, i.e. foreign direct investments and their outflows within BRI countries, especially from the scientific database from WOS and from the American Enterprise Institute (2022), US Energy Information Administration (2022), BP (2021; 2022), MOFCOM (2021; 2022), OECD (2018), World Bank (2019), and IEA (2022) used the following methods:

(i) The method of observation used in the systematic and purposeful perception of the subject of the solved issue of the contribution. The observation was used in specific processes within ODFDI and the collection of factual data on the qualitative and quantitative side of the given issue. (ii) The method of analysis, with the help of which we divided the investigated issue into individual parts to reveal their essence, we analysed individual Chinese foreign investments worldwide and within the BR initiative. (iii) Using the Synthesis Method, we investigated connections and relationships between the obtained elements of the research. (iv) Method of comparison within which we compared the obtained data, i.e. the volume of the outflow of Chinese foreign investments within the Belt and Road initiative (Figure 1), but also from the point of view of the sectors where Chinese direct foreign investments flow the most. Subsequently, we took a closer look at individual types of energy in the energy sector in the years 2014-2022. Another method used was (v) the method of exploration, by which we analysed the achieved results of the comparison and graphically represented the individual results obtained. The last analysis was (vi), which was the method of explanation, using which we drew theoretical conclusions from the knowledge obtained.

The result of the entire methodological procedure, illustrated with the help of Figure 2 and the determination of the research question presented in the contribution, was a thorough analysis and calculation of individual sectors into which Chinese foreign investments flow and shows which sectors have the most significant percentage shares of China's Outflow of Foreign Direct Investment (OFDI). Then, we focused on the sector with the largest percentage share, i.e., the energy sector. Also, to point out how the level of connection between the initiative participants

could be increased and thereby facilitate international trade and investment, create networks of free trade areas, maintain closer economic ties and deepen political trust.

**Figure 1:** Chinese FDI outflows along the BRI initiative from 2014 to 2022

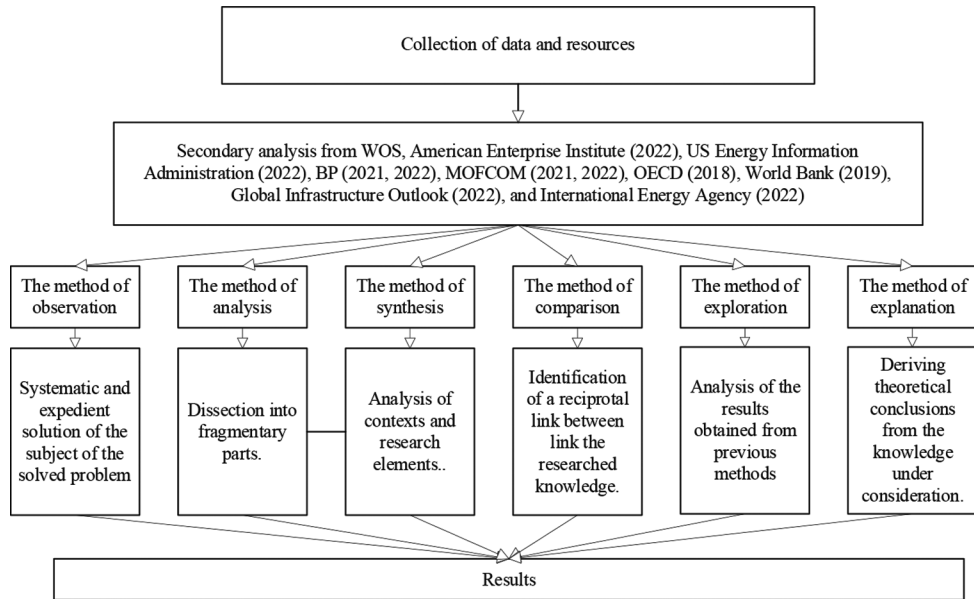


Source: own processing according to American Enterprise Institute (2022)

Before the paper was created, we conducted a bibliometric analysis. Bibliometric analysis examined the subject of Foreign Direct Investment in more detail. The Web of Science, today's most famous independent scientific database in the world, provided us with the data necessary to perform the given analysis. We found the required information by searching for the keyword Direct foreign investments. It was carried out using the WOSviewer. WOSviewer also offers text mining functionality that can be used to construct and visualise co-occurrence networks of important terms extracted from a body of scientific literature. The bibliometric analysis was conducted in the categories of Business, Economics, Management, Business Finance, International Relations and Political Science and Law, and through publications published in 2021, 2022 and 2023, we will display (1) authors dealing with the topic of foreign direct investment (2) countries in which the most publications are published on the topic of foreign direct investment and (3) keywords associated with the topic of foreign direct investment.

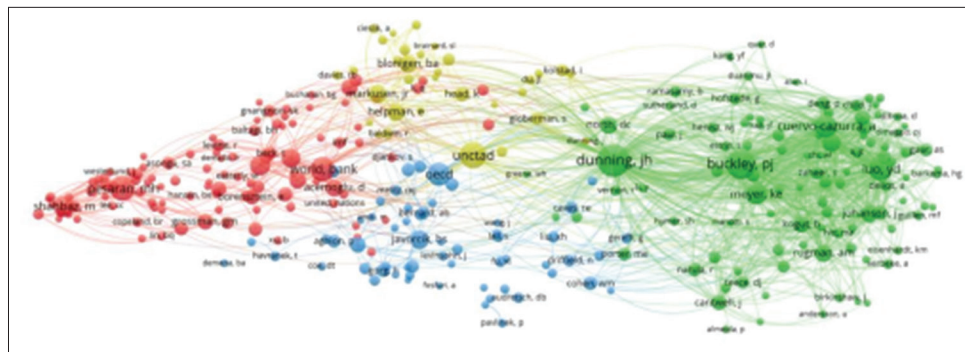
Figure 3 shows the relationship between authors concerning the number of citations, with a stronger co-citation indicated by a

**Figure 2:** Methodological procedure of the paper



Source: own processing

**Figure 3:** Bibliometric analysis of authors dealing with foreign direct investment



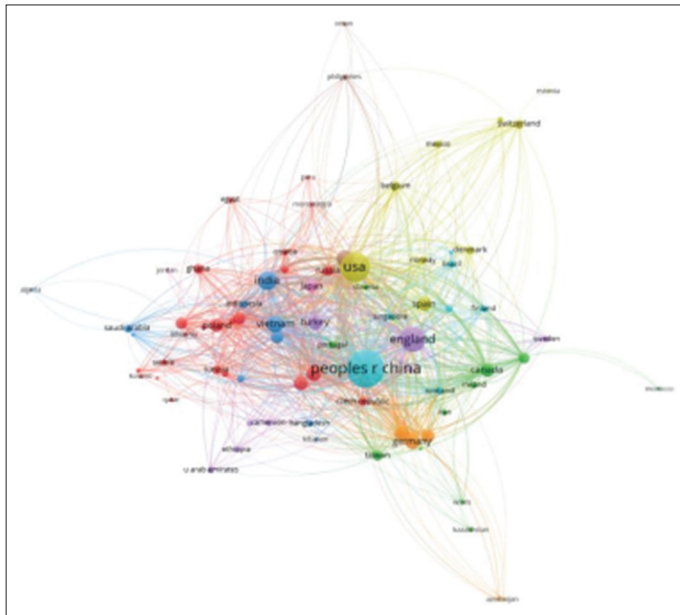
Source: Own analysis based on WoS data (2023)



thicker line. The size of the circles indicates the frequency of occurrence. The closer two circles are to each other, the stronger their relationship is regarding co-citation ties. The most substantial relationship between authors in terms of the thickness of co-citation lines is between J.H. Dunning and P.J. Buckley. At the same time, J.H. Dunning became the most cited author.

Figure 4 shows that the most substantial relationship between countries regarding the thickness of co-citation lines is between China and the US. The highest number of collaborators is connected to China.

**Figure 4:** Bibliometric analysis of countries dealing with foreign direct investment



Source: own analysis based on WoS data (2023)

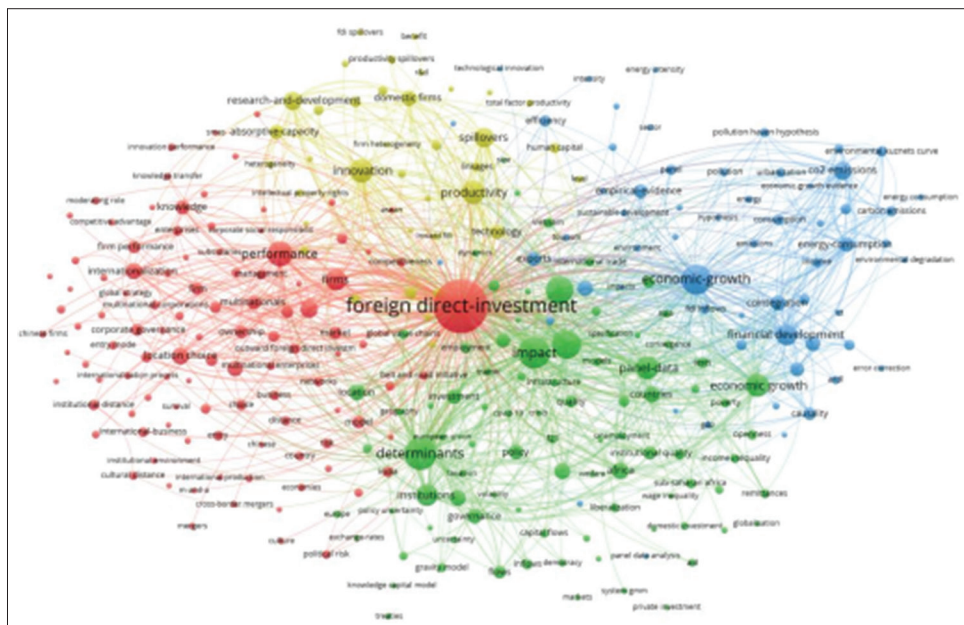
The most substantial relationship between the keywords in terms of the thickness of the occurrence lines is foreign direct investment and determinant. Foreign direct investment was the most frequent keyword in the analysis (Figure 5).

### 3. RESULTS AND DISSCUSION

In this part of the contribution, we focused on separate results based on the results of the individual methods used within the methodology. The BRI represents a geopolitical project, with the help of which China wants to become a global hegemony. Before focusing on the energy sector, the largest sector in terms of investment volume, we had to point out the volume of Chinese outward direct investment. Chinese FDI to countries along the BRI initiative tended to grow, almost doubling in 2019 compared to 2014. However, in the last 2 years, there has been a decrease in the volume of Chinese foreign direct investment outflows, as seen in Figure 1 (IEA, 2022).

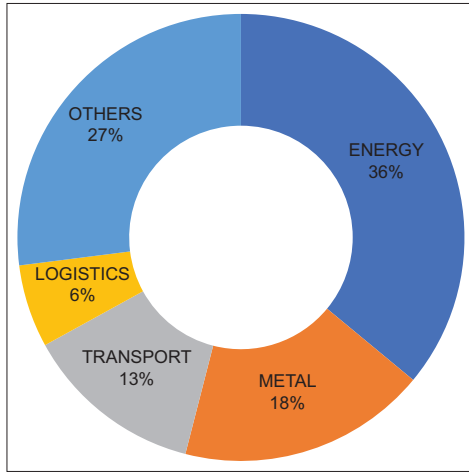
The central part of this paper was focused on the energy sector. Since 2011, China has been the world's largest energy consumer (Duan et al., 2018; Bloomberg News, 2021). The industrial sector uses two-thirds of the energy consumed in China. The main reason for energy investments is that China is a net importer of energy, especially oil (BP, 2022). Since 2000, China's oil consumption has increased dramatically. Despite having sizeable domestic oil reserves, China's national oil firms cannot meet demand. According to the EIA (2022) 2016, imports accounted for approximately 70% of the country's total supply; in 2021, it was 72%. First, we show China's total investment (Figure 6), which was \$550 billion (including non-BRI countries), down 25% from \$740 billion in 2016-2020 (the 13<sup>th</sup> 5-year plan). Also, China's contract volume is projected to decrease from \$800 billion in the previous 5-year plan to \$700 billion in this 5-year plan (MOFCOM, 2021; 2022).

**Figure 5:** Bibliometric analysis of keywords on foreign direct investment



Source: own analysis based on WoS data (2023)

**Figure 6:** Chinese investment in BRI countries by sector from 2014 to 2022



Source: own processing according to American Enterprise Institute (2022)

According to other estimates (EIA, 2022; OECD, 2018; World Bank, 2019), oil consumption will remain high in the short and medium terms, significantly tilting the oil reserves balance in the country in favour of imports. 1/3 of all investments under the BRI initiative go to the energy sector (Hou et al., 2021).

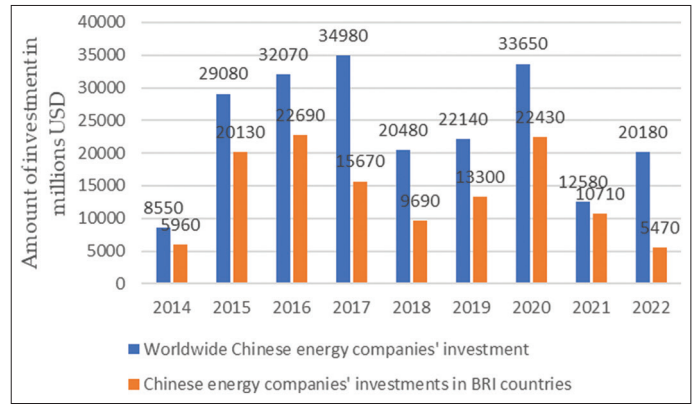
The Chinese government has identified China's foreign investment as a critical approach to increasing energy security in its 5-year plans and long-term energy planning. Increasing oil and gas reserves, increasing production, and diversifying supply sources can contribute to promoting energy security through China's energy investments. (ASEAN, 2019; Telnova et al., 2020; IEA, 2021).

Since 2013, almost all Chinese energy companies' investments have gone to BRI countries (American Enterprise Institute, 2022). A consistent upward trend was evident from 2013 to 2015 in direct investment by Chinese energy enterprises in countries along the BRI. From \$5.96 billion in 2013 to \$22.69 billion in 2015, there was a significant 3.8-fold increase in 3 years (Figure 7).

China's energy investments include oil, hydropower, alternative energy, natural gas, and coal. The sharp drop in Chinese investment after 2019 was caused by the COVID-19 pandemic (Chow-Bing, 2020; Rauf et al., 2021; Huang, 2022). Although energy has remained China's primary sector for investment within the BRI regions, Chinese capital has gradually diversified into sectors such as transportation, real estate, technology and innovation, and tourism. Among the most significant investments is Malaysia's 1MDB, which struck a deal to sell its power assets in 2015 to China General Nuclear Power Corporation and China Southern Power Grid for \$5.26 billion (Figure 8). Another significant investment is China National Petroleum Corp. and China National Offshore Oil Corp's 2019 purchase of a 20% stake in the \$4.04 billion Arctic-2 liquefied natural gas project led by Russian gas producer Novatek (EIA, 2022; OECD, 2018).

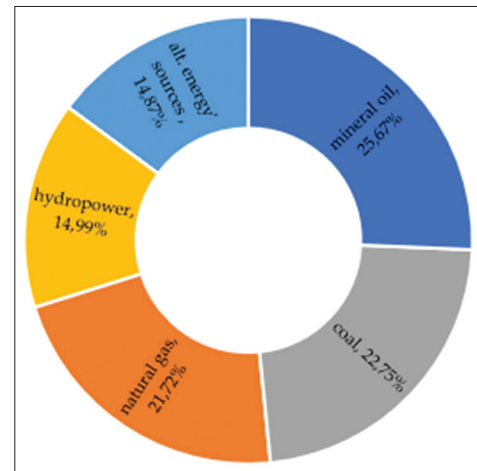
Although the BRI initiative focuses on traditional fossil fuels, particularly oil and gas projects, investments in alternative energy

**Figure 7:** Investment by Chinese energy companies



Source: own processing according to American Enterprise Institute (2022)

**Figure 8:** The share of investments in individual types of energy in the years 2014-2022



Source: own processing according to American Enterprise Institute (2022)

sources have grown recently, including investments in hydro, wind, and solar energy, which have increased dramatically (Figure 9). To highlight, China has not engaged in coal-related investment projects since 2020 (American Enterprise Institute, 2022; OECD, 2018; World Bank, 2019).

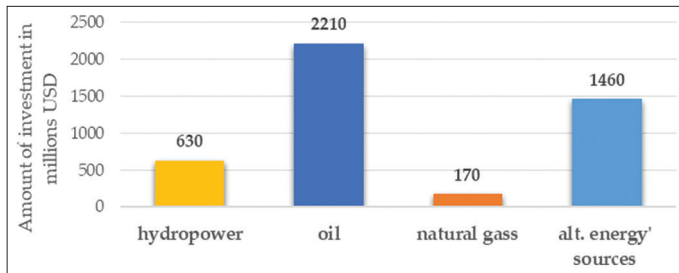
### 3.1. Investments in Green Energy

China is well positioned to help deliver low-carbon technologies to emerging markets and developing economies as part of the BRI initiative. China is the world's largest producer of solar panels, wind turbines, batteries, and electric cars. These technologies are becoming increasingly popular as their costs are reduced for financial and environmental reasons (Wang, 2022; Green Finance and Development Center, 2022) Figure 10.

In 2020, investments in renewable energy such as solar, wind, and hydro will account for most of China's overseas energy investment, increasing from 35% in 2019 to 52% 2020. This is particularly important right now, as rising fossil fuel prices and fuel shortages caused by the conflict in Ukraine are crippling poor energy-importing countries. In 2016, the Power Construction Corporation

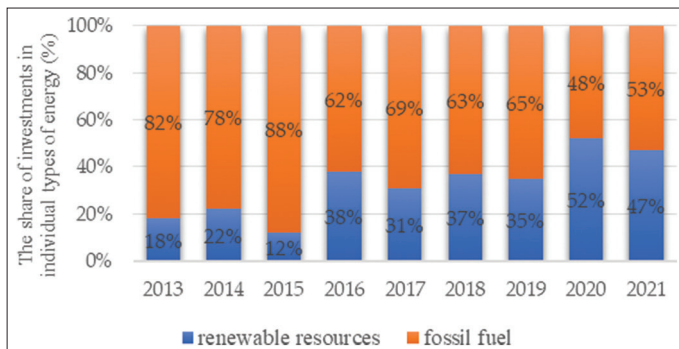
of China invested \$2.03 billion in the Nam Ou Hydropower Project in Laos, which includes seven cascade hydropower plants along the Nam Ou River. A joint venture was created for this project in which Power Construction Corporation of China owns an 85% stake (Figure 8). At the same time this year, the Chinese state enterprise China Three Gorges South Asia Investment Ltd. invested 1.65 billion dollars in the Karot hydroelectric project. The Karot hydropower project is one of China's energy initiatives under the China-Pakistan Economic Corridor. It aims to promote sustainable economic growth in the region while helping Pakistan achieve its renewable energy goals (Latief and Lefen, 2019; Yukhanaev et al., 2014). The Karot hydropower plant was developed under a joint venture in which China Three Gorges South Asia Investment Ltd. owns a 93% share. As part of a scientific study, Li et al. (2022) found that China has invested in 28 renewable power projects in Pakistan. China's investment in renewable energy through the BRI has created approximately 8,905 jobs and \$39.8 million in manufacturing value for Pakistan (Latief and Lefen, 2019). Africa (IEA, 2021; Parente et al., 2019; Abdulsalam et al., 2021) wants to deepen cooperation with China in renewable energy sources. Chinese investment in renewable energy is growing in sub-Saharan Africa. China Energy Investment has invested \$1.64 billion to acquire a 75 per cent stake in four wind farms developed by Copelouzos in Greece through its subsidiary Shenhua Renewable Co. Cooperation between the two countries in the green energy sector aims to expand China's influence in the Balkans as well as

**Figure 9:** The number of investments in individual types of energy in 2021. Source: own processing according to American Enterprise Institute (2022)



Source: own processing according to American Enterprise Institute (2022)

**Figure 10:** Comparison of investment in renewable resources vs. fossil fuels. Source: own processing according to American Enterprise Institute (2022)



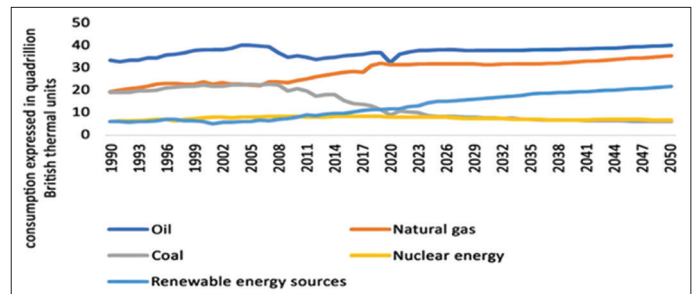
Source: own processing according to American Enterprise Institute (2022)

other European countries. Significant investment in robust and sustainable green infrastructure is required to meet the Sustainable Development Goals by 2030 and achieve net zero emissions by 2050 (Figure 11).

According to the American Enterprise Institute (2022), MOFCOM (2021), OECD (2018) and IEA (2021), developing economies face increasing energy needs as they industrialise. The demand for electricity in developing economies is growing 3 times faster than in developed economies. Between 2020 and 2050, global energy consumption will increase by around 50% if current economic trends continue. In September 2021, China stepped up its support for other developing countries in developing green and low-carbon energy and, simultaneously, promised not to build new coal-burning power projects abroad (MOFCOM, 2022). However, the problem is that they leave the host country without the technical know-how to manage the green infrastructure. The projects are managed and built by Chinese nationals.

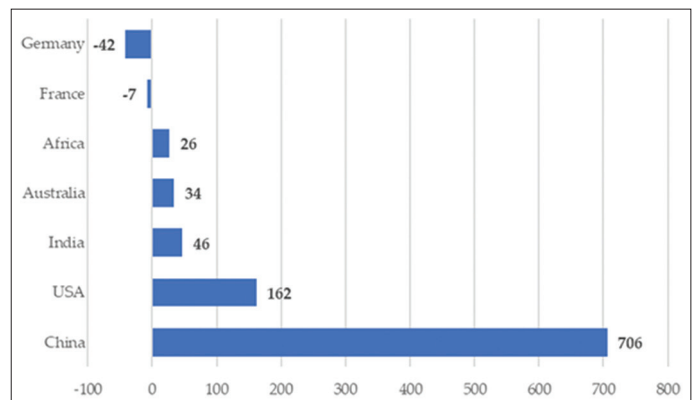
Figure 12 shows China has a dominant position in the annual change in renewable energy production. However, according to the IEA (2022), Africa is home to 60% of the world's potential solar resources but currently owns only 1% of solar photovoltaic capacity. China has dramatically increased the use of solar energy, mainly due to severe air pollution and an urgent need for electricity. China has the most prominent photovoltaic capacity in the world, and it could use this advantage by investing in science and research

**Figure 11:** Global energy consumption forecast



Source: Own processing according to American Enterprise Institute (2022)

**Figure 12:** Global energy consumption forecast in some countries



Source: Own processing according to American Enterprise Institute (2022)



in Africa and thus create an innovative platform to strengthen the research and development of sustainable technologies and their applications in Africa. Apart from solar resources, Africa has excellent wind potential; on the contrary, China has one of the world's most efficient supply chains for wind turbines.

#### 4. CONCLUSION AND RECOMMENDATION

International trade creates opportunities for long-term development and cooperation between countries. Trade between countries within regions, subregions or continents undoubtedly contributes to the country's economic growth. And this is the primary goal of the Belt and Road initiative. According to (Chow-Bing, 2020), this initiative has five official goals: (1) to coordinate the policies of the participating countries, (2) to create infrastructure connectivity, (3) to promote free trade, (4) to integrate financial systems and last but not least (5) to connect cultures.

The BRI is tasked with building land, sea, and air routes to increase connectivity between the initiative participants, facilitate international trade and investment, create accessible trade areas and networks, maintain closer economic ties, and deepen political trust. The paper aimed to highlight the strength of the Belt and Road initiative, especially within the energy sector, based on a more profound analysis built on the theoretical framework resulting from previous research.

China has excess production capacity. It invests in the development of countries that will eventually demand their goods. The BRI uses Chinese expertise to forge closer ties with other countries, create trade channels for China, and help failing economies by providing infrastructure that will ultimately benefit China. The BRI intends to become an economic partner of nations in the rest of the developing world, especially Africa, aiming to expand markets and secure voices in international organisations.

The paper aimed to use the methods of analysis, synthesis, comparison, exploration, and explanation to analyse Chinese investments that flow into various sectors worldwide, especially into the countries participating in the Belt and Road Initiative from 2013 to the present. China's gradually increasing assertiveness at the international level marked the beginning of several influential geopolitical projects. The largest of them is the Belt and Road initiative, which will be the subject of this work. The Belt and Road is China's geopolitical project, which, according to official words, was created to improve regional integration, increase trade, and stimulate economic growth for all parties involved. Excessive industrial capacity, low domestic demand, and stagnant exports abroad are the real reasons this project was created. China constantly looks for new international markets among the poorer developing countries of Africa, Asia, and South America.

The problem is that these countries have insufficient infrastructure that does not meet the logistical needs of Chinese trade. As part of the Belt and Road Initiative, China invests in various projects in the form of "loans" and, in many cases, creates debt traps that allow China to seize the assets of participating countries. Countries will face rising debt-to-GDP ratios, which may push

them into an economic crisis. Developing countries' financial situation is unsuitable for paying off large-scale infrastructure projects. However, infrastructure built on a transformative scale in places where local transport is prolonged and unsafe will improve transportation and the economy and boost tourism. In addition to infrastructure, China invests in energy, technology, agriculture, and other sectors under the BRI. In our paper, we focused on the energy sector and its development so far within the given initiative, and we also defined what the initiative should focus on within renewable resources.

#### 5. ACKNOWLEDGEMENT

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#### REFERENCES

- Abdulsalam, A., Xu, H., Ameer, W., Abdo, A.B., Xia, J. (2021), Exploration of the impact of China's outward Foreign Direct Investment (FDI) on economic growth in Asia and North Africa along the Belt and Road (B&R) initiative. *Sustainability*, 13(4), 1623.
- American Enterprise Institute. (2022), China Global Investment Tracker. Available from: <https://www.aei.org/china-global-investment-tracker> [Last accessed on 2023 Dec 21].
- ASEAN. (2019), Belt and Road Projects: Past, Present, Future. Available from: [https://asean.china-mission.gov.cn/eng/ydyl/201904/t20190425\\_8236063.htm](https://asean.china-mission.gov.cn/eng/ydyl/201904/t20190425_8236063.htm) [Last accessed on 2023 Nov 21].
- Bae, H.S. (2020), The relationships between orientation, collaboration and performance for supply chain management of Korean FDI firms for sustainable growth. *Sustainability*, 12(24), 10311.
- Bloomberg News. (2021), China Steps Up Overseas Hunt for Ore Needed to Make Aluminium. Available from: <https://www.bloomberg.com/news/articles/2021-12-09/china-steps-up-overseas-hunt-for-ore-needed-to-make-aluminum> [Last accessed on 2023 Dec 28].
- BP. (2021), Statistical Review of World Energy. Available from: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2021-full-report.pdf> [Last accessed on 2023 Dec 21].
- BP. (2022), Statistical Review of World Energy. Available from: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf> [Last accessed on 2023 Dec 21].
- Chow-Bing, N. (2020), COVID-19, Belt and Road Initiative and the Health Silk Road: Implications for Southeast Asia. Available from: <https://library.fes.de/pdf-files/bueros/indonesien/16537.pdf> [Last accessed on 2023 Nov 01].
- Duan, F., Ji, Q., Liu, B.Y., Fan, Y. (2018), Energy investment risk assessment for nations along China's Belt & Road Initiative. *Journal of Cleaner Production*, 170, 535-547.
- Dunning, H.J. (2000), The eclectic paradigm as an envelope for economic and business theories of MNE activity. *International Business Review*, 9(2), 163-190.
- EBRD. (2013), Belt and Road Initiative (BRI). Available from: <https://www.ebrd.com/what-we-do/belt-and-road/overview.html#> [Last accessed on 2024 Jul 20].
- EIA. (2022), Africa Energy Outlook 2022. Available from: <https://www.iea.org/news/global-energy-crisis-shows-urgency-of-accelerating->

- investment-in-cheaper-and-cleaner-energy-in-africa [Last accessed on 2023 Dec 07].
- EIA. (2022), Annual Energy Outlook 2022. Available from: <https://www.eia.gov/outlooks/aeo> [Last accessed on 2023 Dec 07].
- Granneman, A., Van Dijk, M. (2015), Foreign direct investment in China, the factors determining a preference for investing in Eastern or Western provinces. *Modern Economy* 6(8), 924-936.
- Green Finance & Development Center. (2022), Chinese Investments in Countries of the Belt and Road Initiative (BRI) from 2013 to 2021 (in Billion US Dollars). Available from: <https://www.statista.com/statistics/1274991/china-total-investment-in-belt-and-road-countries> [Last accessed on 2023 Dec 11].
- Hou, F., Su, H., Li, Y., Qian, W., Xiao, J., Guo, S. (2021), The impact of foreign direct investment on China's carbon emissions. *Sustainability*, 13, 11911.
- Huang, Y.Y. (2022), Environmental risks and opportunities for countries along the Belt and Road: Location choice of China's investment. *Journal of Cleaner Production*, 211, 14-26.
- Hussain, J., Zhou, K., Guo, S., Khan, A. (2020), Investment risk and natural resource potential in "Belt & Road Initiative" countries: A multi-criteria decision-making approach. *Science of the Total Environment*, 723, 137981.
- IEA. (2022), Financing Clean Energy Transitions in Emerging and Developing Economies. Available from: <https://www.iea.org/reports/financing-clean-energy-transitions-in-emerging-and-developing-economies> [Last accessed on 2023 Feb 07].
- Jiang, J., Ao, L. (2023), Risk evaluation and prevention of China's investment in countries along the Belt and Road. *Journal of Intelligent and Fuzzy Systems*, 44(2), 1645-4659.
- Jiang, L., Minhe, J. (2016), China's energy intensity, determinants and spatial effects. *Sustainability*, 8(6), 544.
- Kuo, L., Kommenda, N. (2018), What is China's Belt and Road Initiative? Available from: <https://www.theguardian.com/cities/ng-interactive/2018/jul/30/what-china-belt-road-initiative-silk-road-explainer> [Last accessed on 2024 Jul 18].
- Latief, R., Lefen, L. (2019), Foreign direct investment in the power and energy sector, energy consumption, and economic growth: Empirical evidence from Pakistan. *Sustainability*, 11(1), 192.
- Li, R., Xu, L., Hui, J., Cai, W., Zhang, S. (2022), China's investments in renewable energy through the Belt and Road initiative stimulated local economy and employment: A case study of Pakistan. *Science of the Total Environment*, 835, 155308.
- Liang, P.N., Wu, M.Y., Jiang, L.C. (2021), Energy investment risk assessments for nations along China's Belt & Road initiative: A deep learning method. *Applied Sciences*, 11(5), 2406.
- Liu, H., Gong, P., Wang, J., Clinton, N., Bai, Y., Liang, S. (2020), Annual dynamics of global land cover and its long-term changes from 1982 to 2015. *PANGAEA*, <https://doi.org/10.1594/PANGAEA.913496>
- Majerova, J., Gajanova, L., Nadanyiova, M., Sipos, T. (2024), Who should communicate to make the world a greener place? Car brand loyalty as an essential attribute of pro-environmental education. *Acta Polytechnica Hungarica*, 21(7), 107-121.
- Mardell, J. (2023), Why We Should Stop Talking about China's Belt and Road Initiative. Available from: <https://chinaobservers.eu/why-we-should-stop-talking-about-chinas-belt-and-road-initiative> [Last accessed on 2024 Jul 20].
- MERICs. (2022), Mapping the Belt and Road Initiative: This is Where We Stand. Available from: <https://documents1.worldbank.org/curated/pt/264651538637972468/pdf/connectivity-along-overland-corridors-of-the-belt-and-road-initiative.pdf> [Last accessed on 2023 Nov 01].
- MOFCOM. (2021), The 14<sup>th</sup> Five-Year Plan for Business Development. Available from: [http://images.mofcom.gov.cn/zhs/202107/20210708110842898.pdf?mc\\_cid=25492edd68&mc\\_id=7d8719095d](http://images.mofcom.gov.cn/zhs/202107/20210708110842898.pdf?mc_cid=25492edd68&mc_id=7d8719095d) [Last accessed on 2023 Dec 19].
- MOFCOM. (2022), Statistical Bulletin of China's Outward Foreign Direct Investment. Available from: <https://images.mofcom.gov.cn/fec/202211/20221107152537194> [Last accessed on 2023 Dec 20].
- OECD. (2018), The Belt and Road Initiative in the Global Trade, Investment, and Finance Landscape. *OECD Business and Finance Outlook*. Available from: <https://www.oecd.org/finance/chinas-belt-and-road-initiative-in-the-global-trade-investment-and-finance-landscape.pdf> [Last accessed on 2023 Nov 01].
- Parente, R., Rong, K., Geleilate, J.M.G., Misati, E. (2019), Adapting and sustaining operations in weak institutional environments: A business ecosystem assessment of a Chinese MNE in Central Africa. *Journal of International Business Studies*, 50(1), 275-291.
- Rauf, A., Ozturk, I., Ahmad, F., Shehzad, K., Chandiao, A.A., Irfan, M., Abid, S., Jikai, L. (2021), Do tourism development, energy consumption and transportation demolish sustainable environments? Evidence from Chines Provinces. *Sustainability*, 13(22), 12361.
- Telnova H., Kolodiziev, O., Kuzheliev, M., Krupka, I., Boiko, N. (2021), Foreign direct investment in the Eurozone countries: Stochasticity of the financial influence factors. *Financial and Credit Activity Problems of Theory and Practice*, 4(35), 107-120.
- Wang, C.N. (2022), China Belt and Road Initiative (BRI) Investment Report 2021. Available from: [https://greenfdc.org/wp-content/uploads/2022/02/nedopil-2022\\_bri-investment-report-2021.pdf](https://greenfdc.org/wp-content/uploads/2022/02/nedopil-2022_bri-investment-report-2021.pdf) [Last accessed on 2023 Dec 20].
- World Bank. (2019), Belt and Road Economics: Opportunities and Risks of Transport Corridors. Washington, DC: World Bank. Available from: <https://worldbank.org/en/topic/regionalintegration/publication/belt-and-road-economics-opportunities-and-risks-oftransport-corridors> [Last accessed on 2023 Nov 17].
- Wu, S.H., Liu, L.L., Liu, Y.H., Gao, J.B., Dai, E.F., Feng, A.G., Wang, W.T. (2019), The Belt and Road: Geographical pattern and regional risks. *Journal of Geographical Sciences*, 29(4), 483-495.
- Xie, Q., Hua, Y. (2023), Institutional differences and the choice of outward foreign direct investment mode under the "Belt and Road" initiative: Experience analysis based on China's manufacturing enterprises. *Sustainability*, 15(9), 7201.
- Yu, K.H. (2019), Energy cooperation under the belt and road initiative: Implications for global energy governance. *Journal of World Investment and Trade*, 20(2), 243-258.
- Yuan, Y., Tan-Mullins, M. (2023), An innovative approach for energy transition in China? Chinese national hydrogen policies from 2001 to 2020. *Sustainability*, 15(2), 1265.
- Yukhanaev, A., Sharma, S., Nevidimova, A. (2014), Subnational determinants of foreign direct investments in the Russian federation. *Journal of Eastern European and Central Asian Research*, 1(2), 10.
- Zhang, S. (2022), Protection of foreign investment in China: The foreign investment law and the changing landscape. *European Business Organization Law Review*, 23, 1049-1076.