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**«GREEN ENERGY» AND ENVIRONMENTAL SUSTAINABILITY
IN THE CONTEXT OF THE BELT AND
ROAD INITIATIVE**

China's ambitious project on the new Silk Road implies the formation of a new infrastructure in various fields, including in the energy sector. The total share of investment by Chinese companies in the energy sector more than half of them are traditional sources of energy: coal, oil and gas. Statistics on investing in black energy has raised many questions about the future of Belt and Road Initiative energy projects amongst western partners and non-governmental organisations. China's share in global carbon dioxide emissions is 30 percent, making it the largest CO₂ emitter in the world. Emissions of European Union's 28 countries, in comparison, were 9% of the world share. At the same time, China is the world's biggest investor into the renewable energy with the contribution of 36% in hydropower, 40% in wind power and 36% in solar PV compared to the rest of the world. China is also one of the leaders in domestic spendings on research and development of applied science technologies, yielding to the US, but overtaking European Union. With all those factors, the real question today is: will the Belt and Road Initiative promote green or black energy? With the adoption by the Chinese government of the "One Belt, One Way" initiative, a new stage in the development of European-Chinese relations begins, and the energy component of these relations will play an important role not only for these two entities, but also for countries located between Europe and China.

Key words: Green Energy, "Belt and Road", China, European Union, Renewable Energy Sources, Clean energy, Energy Security.

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**«Жол және белбеу» бастамасы контексіндегі
«жасыл энергия» мен экологиялық тұрақтылық**

Қытайдың «Жаңа жібек жолы» атты өршіл жобасы түрлі салаларда, оның ішінде энергетикада жаңа инфрақұрылымды қалыптастыруды көздеуде. Энергетика мен осы саладағы компанияларды дамытуға бағытталған Қытай инвестицияларының жартысынан астамы дәстүрлі қуат көздері: көмір, мұнай мен газдың үлесіне келіп отыр. «Қара» энергетикаға жұмсалатын инвестициялардың статистикасы батыстық еріптестер мен бейүкіметтік ұйымдар арасында Қытайдың «Бір белбеу, бір жол» бастамасының энергетикалық жобаларының болашағы туралы бірталай сұрақтарды көтерген болатын. Әлем бойынша көміртек диоксидін шығарудағы Қытайдың үлесі 30 пайызды құрап, осы мемлекетті дүниежүзіндегі ең ірі CO₂-мен қоқыстаушы етіп отыр. Салыстырып қарайтын болсақ, мысалға Еуропалық Одаққа кіретін 28 мемлекеттің қоқысы әлемдік көлемнің 9%-ын құрауда. Солай бола тұрып, қазіргі таңда Қытай жаңғырмалы энергияны дамытудағы әлем бойынша ең ірі инвестор болып табылады (36% гидроэнергетикаға, 40% жел энергетикасына және 36% күн энергиясына). Қытай энергетика бойынша ішкі зерттеулер мен технологияларды дамыту бойынша

АҚШ-қа орын беріп, бірақ Еуропалық Одақты басып озып, осы саладағы көшбасшылардың бірі болып табылады. Аталған факторларды есепке алғанда, қазіргі кезде туындап отырған басты сауал: Қытайдан тыс жерде «Бір белбеу, бір жол» бастамасын іске асыру энергетиканың қай бағыты, «қара» не «жасыл» энергияның дамуына жағдай жасайды екен? Қытай үкіметінің «Бір белбеу, бір жол» бастамасын қабылдағаннан кейін еуропа-қытайлық қатынастардың дамуындағы жаңа кезең басталады және осы қатынастардың энергетикалық компоненті осы екі субъект үшін ғана емес, сонымен қатар Еуропа мен Қытай арасында орналасқан елдер үшін де маңызды рөл атқарады.

Түйін сөздер: Жасыл энергия, «Жол және белбеу», Қытай, Еуропалық Одақ, Энергетикалық қауіпсіздік, таза энергия.

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«Зеленая энергия» и экологическая устойчивость в контексте инициативы Пояса и Пути

Амбициозный проект Китая нового Шёлкового пути предполагает формирование новой инфраструктуры в различных областях, в том числе в энергетическом секторе. Более половины китайских инвестиций, направляемых на развитие энергетического сектора и компаний, приходится на традиционные источники энергии: уголь, нефть и газ. Статистика инвестиций в чёрную энергетику подняла немало вопросов среди западных партнеров и неправительственных организаций о будущем энергетических проектов китайской инициативы «Один пояс, один путь». Доля Китая в глобальных выбросах двуокиси углерода составляет 30 процентов, что делает его крупнейшим источником выбросов CO₂ в мире. Для сравнения, выбросы 28 стран Европейского Союза составляли 9% мировой доли. В тоже время в сравнении с остальным миром, Китай сегодня является крупнейшим в мире инвестором в возобновляемую энергетику (36% составляет гидроэнергетика, 40% ветроэнергетика и 36% солнечная энергия). Китай является одним из лидеров в расходах внутренних на исследования и разработки технологий, уступая США, но обогнав Европейский Союз. Учитывая все эти факторы, реальный вопрос сегодня заключается в следующем: какому из направлений энергетического сектора будет способствовать развитие инициативы «Пояс и путь» за пределами Китая, «зеленой» или «чёрной» энергии? С принятием китайским правительством инициативы «Один пояс - один путь» начинается новый этап развития европео-китайских отношений, и энергетическая составляющая этих отношений будет играть важную роль не только для этих двух субъектов, но и для также для стран, расположенных между Европой и Китаем.

Ключевые слова: Зеленая энергия, «Пояс и путь», Китай, Европейский Союз, Возобновляемые источники энергии, чистая энергия.

Introduction

The initiative of «Belt and Road» is a Chinese project to promote peaceful cooperation and joint development of the cooperation in which all countries participate on an equal footing, regardless of their size and level of well-being. This is an open cooperation, which will bring new positive energy to the cause of peace, inheriting the spirit of the Silk Road and striving for mutual benefit, win-win and complementarity of each other's advantages, realizing multilateral, independent, balanced and sustainable development; it is a cooperation promoting regional development, stimulating the exchange of useful ideas.

«Belt and Road» is an important chance and a cooperation platform to strengthen harmonization of economic politicians, developing bilateral and multilateral, deeper, large-scale and high-level cooperation, as well as the collaborative creation of an open, inclusive, balanced and comprehensive architecture cooperation of a new type. The initiative to jointly build «One Belt, One Way» with such an external characteristic feature as equality and inclusiveness shows great prospects for connecting the Chinese dream with a world dream, uniting all countries to jointly cooperation.

The aggravated geopolitical tension dominates in the regions of the world where the main gas and oil reserves are located. As an indicator of the

evolution of primary energy consumption, which is a reflection of economic growth, there were two giants on the podium: the United States and Europe. In 2000, the United States consumed 2,269 million tons (millions of tons of oil equivalent), and Europe – 1,853 million tons, which was almost half the world’s consumption rates. China consumed 1,161 million tons. Looking at the latest statistics of 2017, United States expended 2,201 million tons and Europe consumed 1,867 – very close to their count in the year 2000, while China exceeded 3,000 million tons. Thus, China replaced Europe and the USA on the podium of the world’s largest energy powers (Global Energy Statistical Yearbook, 2018). However, we can see that both China and Europe are amongst the top energy markets nowadays.

One of the important tasks is to define whether the direction of energy investments is leaning towards green and clean (primarily renewable energy sources) energy or black (primarily oil, gas and coal) energy on the whole New Silk Way route. For both Europe and China, the renewable energy sources are more favourable, as they will allow countries to be less dependent on imports and become more self-efficient. However, transition to renewables demands new technologies and finances. The question is how fast and secure transition will be, and how it will affect the Chinese-European-Central Asian relations. With the adoption of the «One Belt-One Road» initiative by the Chinese government, a new stage of development begins for European-Chinese relations, and the energy component of these relations will play an important role not only for these two actors, but also for the countries located between Europe and China. Key partners on the New Silk Road include such strategically important regions of the Caspian basin and Central Asia.

Theoretical basis of research and analysis of sources used

An important milestone is also the strategy of the European Commission – 2020, led by Jean-Claude Juncker, whose speeches also served as a resource for understanding the attitudes of European governance regarding energy security. An important point is the analysis of the policy of China regarding the New Silk Road project and the participation of European countries in the Chinese initiative. To this end, the plan for implementing the concept of the New Silk Road, represented by the Ministry of Foreign Affairs and the Ministry of Commerce of China, is also being considered.

Understanding of energy security problems arises from the basic theory’s of two schools: while realism leans towards the concept of political dependence on the main actor, the neo-liberalist theory is in favour of market interdependence. As realism sees national states as main actors of international system, it is clear that the economy is the subject to policy, so energy is identified as an important tool in defining the political strategies towards other countries, and is also used as a weapon to put pressure on them. Whilst the concept of neo-liberalist theory focuses on the trading relations between the states, as well as concentrating on the global development of energy-related economic ties, therefore the main actor here is not a politically motivated country, but an international oil company (Palonkorpi, 2017). Based on that statement, we can highlight the following possible scenarios for the development of energy security that stem from these theories: in the first case, energy will become completely politicized and countries will be able to use energy as an influential political lever. According to the second scenario, the world will become a huge market for the sale and purchase of energy and will be based on solely economic relations (Advisory Council, 2006).

Going back to understanding the energy relations between different states, we can see that both realism and liberalism agree on the dependence, or interdependence concept. Mikko Palonkorpi from the University of Helsinki examines the positive, or beneficial, and the negative, or threatening, dependencies (Palonkorpi, 2017). The interdependency concept explains the socio-economic and political aspects of why countries act in a certain way (Slaughter, 2011).

The EU-China 2020 Strategic Agenda for Cooperation, adopted in 2013, followed by additions to the strategy: «Elements for a new EU strategy on China», published in 2016, were used to analyze the European vision of Chinese policy. European-Chinese energy relations are regulated through the EU-China Roadmap on energy cooperation 2016-2020. On the Chinese side, the founding document is the strategy of the One Belt – One Road program: Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road.

The EU-China 2020 Strategic Agenda for Cooperation was adopted in 2013 (EU-China 2020 Strategic, 2013). Energy cooperation issues have a separate chapter in sustainable development section, marked as «Energy», although the topic of energy is also mentioned in the sections on industry and infrastructure. The section on sustainable

development tells about mutual obligations in strengthening the role of environmentally friendly technologies and developing of green economy in world markets, where Chinese and European companies play an important role (Towards a climate-neutral Europe, 2017). The «Energy» section consists of several key points. Amongst them is the cooperation between EU and China on energy issues in the framework of Energy Dialogue. In 2019 the dialogue was held between Commissioner on Climate and Energy Miguel Arias Cañete and Administrator of the National Energy Administration Zhang Jianhua (EU-China Summit Joint Statement, 2019).

In general, an integrated approach to the analysis of the energy sector throughout the countries from China to Western Europe through the regions of Central Asia, the Caspian Region and Eastern Europe has been little studied. After 2010, the issue of the green economy and renewable energy, the «green bridges» and the environmental initiative of Kazakhstan became a pressing issue. In Kazakhstan, a number of researchers deal with problems of the New Silk Road and its energy aspects (Gubaidullina, 2012, 2015; Movkebaeva, 2013). Their works served as the basis for an analysis of the Central Asian direction of the New Silk Road. Energy issues in relations between Kazakhstan and China are considered in the context of Indian prospects (Patnaik, 2013; Behera, Gubaidullina, 2018, etc.)

Most of the foreign work covers individual regions of the world, although a comprehensive study was conducted by the following scientists and researchers: Mathews John and Tan Hao with their research «China's New Silk Road: Will it contribute to export of the black fossil-fuelled economy?»; a group of researchers led by Steer Davies Gleave «The new Silk Route – opportunities and challenges for EU transport», the study was commissioned by the European Parliament. The French institute of international relations was also engaged in research on this topic, following which they published a voluminous «Three Years of China's New Silk Roads: From Words to (Re)action?» (Ekman, Nicolas, Seaman, 2017). The Stockholm Institute for Peace and Security also tackled security issues between Europe and China, releasing «The Silk Road Economic Belt: Considering security implications and EU–China cooperation prospects» (Ghiasi, Jiayi, 2017). The study of the Eastern European direction was fundamental to the research «China and Eastern Europe as Parts of the New Silk Road» by Mikheev V.V., Shvydko V.G. (**China and Eastern Europe..., 2016**). All these works served

as the main sources of research, as they provide a comprehensive assessment of not only European-Chinese relations, but also other countries located along the New Silk Road.

Discussion and Result: Promotion of the EU and China interests in the field of sustainable development of energy systems

In 2014, Li Keqiang, the Premier of Chinese State Council, has declared a «war on pollution». After a long course of industrialization, China decided to switch to green technologies and improve the quality of affected air, water and soil.

China has entered the arena of leaders in the financing and use of alternative energy sources in recent years. Based on the data from 2016, China's national dependence on fossil fuels reached 73%, which proves that the consumption still relies mostly on black energy (Mathews, 2016). The amount of emissions China produces is, again, the largest in the world.

On contrary, China's financial contribution to renewable energy sources is equally the largest in the world, with ambitious plans to develop and promote the technologies around the globe. According to Kara Sherwin, China is trying to implement green technologies domestically, but its international trade deals are mainly focused on black energy, mainly through the substantial investments into the coal industry of China Development Bank – \$2.1 billion (Sherwin, 2016).

Looking at the 2017 data from the BP Statistical Review on World Energy, we really see interesting figures on Chinese energy consumption: the total share of coal in energy consumption reduced to 60.4%, which is a record number for the country; renewable energy consumption increased by 31 percent compared to the previous year, most of which was solar consumption. 76 percent of total renewable energy consumption; among the fossil fuels, gas took the first place in the growth of consumption, its consumption increased by 15 percent. Among the fossil fuels (oil, coal and gas), gas is considered one of the least polluting. Despite the fact that the share of renewable energy consumption has increased substantially, China's emissions have still escalated, adding 1.6% to its rate in 2016 (BP Statistical Review, 2019).

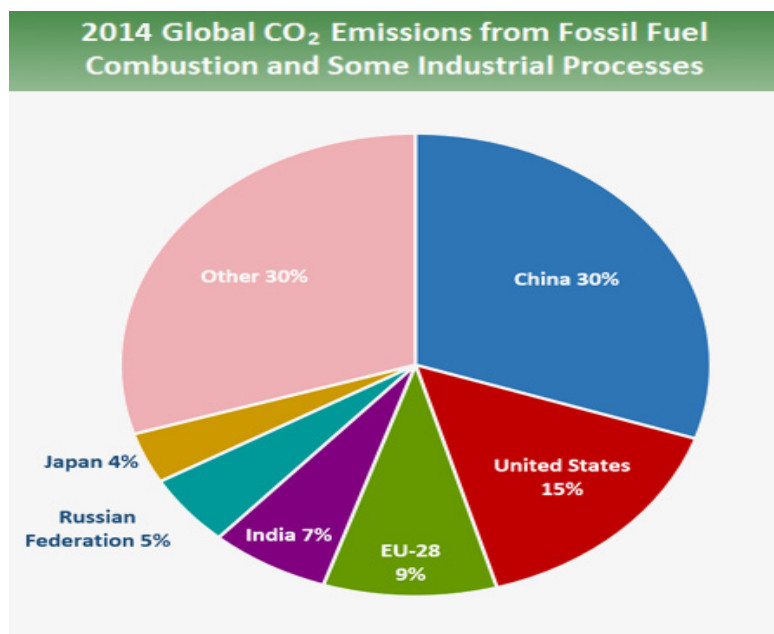
But is China as keen on promotion of green energy internationally?

China has established itself as an important player in the global energy system. As reported by scholars from Boston University, from 2000

to 2013, China’s energy export has exceeded over \$476 billion, twice as much as the United States. In comparison with the US, China overtakes it in the production of renewables: wind and solar electricity in 4 and 5 times, China’s rates of energy power plants export are also two times higher than those of the US – 18% of total global market. According to the same scholars, 55% of total energy export of China have accounted for the black energy (fossil fuels) and 37% – for green (renewable) (Kong Bo, Gallagner, 2016). It should be borne in mind that most of the local Chinese energy is also accounted for by traditional sources of energy. It is

highly possible that in the future the share of green energy in the export of China will only expand due to increasing demand from both developed and developing countries.

With the withdrawal of the United States from the Paris Climate Agreement in 2015, all world views immediately turned to China as a possible leader in the fight against climate change, by whom China wants to position itself. China is not only the world’s largest emitter, but also peaks the consumer rates when it comes to coal, so its response to this challenge will have a critical impact on the global battle against global warming.



Source: (Boden, Marland, Andres, 2017)

China’s share in global carbon dioxide emissions is 30 percent, making it the largest CO₂ emitter in the world. Emissions of European Union’s 28 countries, in comparison, were 9% of the world share (Boden, Marland, Andres, 2017). On the contrary, China is the world’s biggest investor into the renewable energy with the contribution of 36% in hydro-power, 40% in wind power and 36% in solar PV compared to the rest of the world (Buckley, Nickolas, 2017). China is also one of the leaders in domestic spendings on research and development of applied science technologies, yielding to the US, but overtaking European Union (Showstack, 2018).

At the same time, according to European Commission, in the long term, the EU should switch to renewable energy sources at 85-90 percent by 2050. With a 20% share of renewable energy by

2020, the EU is one of the world leaders in the use of renewable energy sources.

However, a diverse structure of EU and the complex composition of countries with different levels of development does not permit the homogeneous transition to renewables. If the leader in the use of renewable energy, Sweden, already has more than half of the total energy consumption that runs on green technologies, on contrary, the share of Luxembourg’s renewable energy doesn’t surpass 5.4% (Renewable Energy Statistics, 2019). Today, the European Union in general is one of the leaders in transition to renewable energy sources and their promotion in the world.

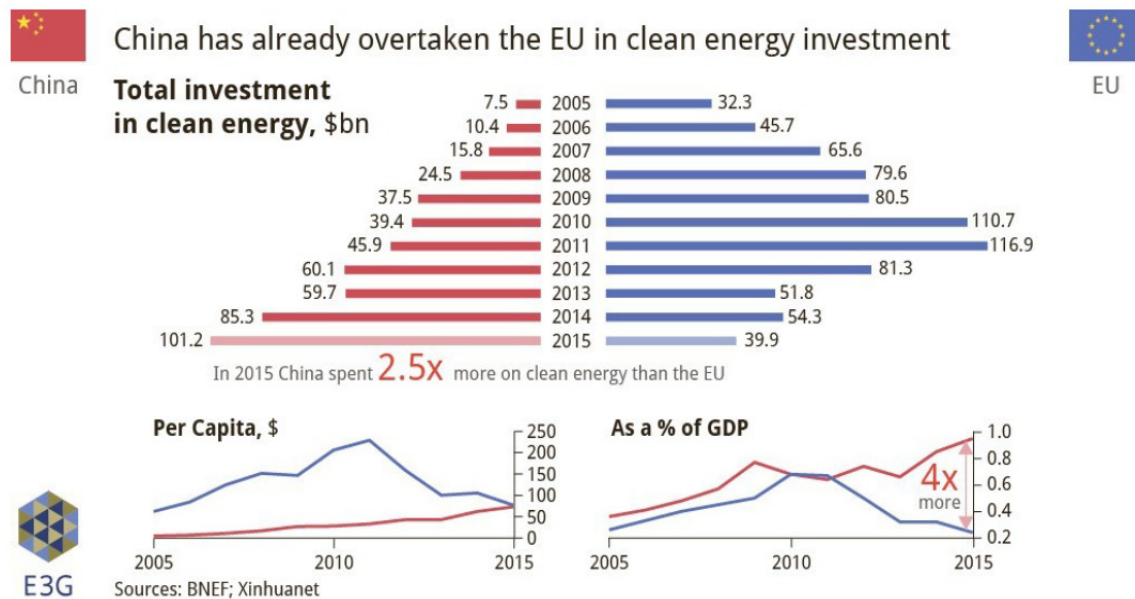
With all those factors, the real question today is: will the Belt and Road Initiative promote green or black energy?

Europe's vision on the PRC's green investment policy

As it was mentioned before, the Belt and Road Initiative's goal is to recreate the Great Silk Road – a trade corridor leading from Asia to Europe. According to this idea, China's investments in European

countries began to increase, and if before, such major world economies as France, Italy, Germany and the United Kingdom were predominant recipients, recently China's focus has shifted to the countries of Central and Southern Europe (Joint Statement on the Implementation..., 2019).

Clean energy investment, China vs EU, 2005-2015



Source: E3G Note that 'Total investment in clean energy' refers to investment for the relevant year in all renewable energy sources (Mathews, 2016)

China has created a new cooperation format called «16 + 1», which includes 11 countries of the European Union (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia) and 5 Balkan non-EU countries (Albania, Bosnia and Herzegovina, Northern Macedonia, Montenegro, Serbia). Although the format of cooperation is quite promising with the holding of annual summits (the latter was held in Sofia, Bulgaria in 2018), critics, in particular Fraser Cameron, the director of EU-Asia Centre think tank, say that this project is only a way of moving to Western markets and nothing more than that, and that later it will lose its need due to the larger and more promising project of the New Silk Road. Europe, specifically developed western countries, is the final destination for Chinese trade routes.

It is important to note that European countries are interested in Chinese investments in Central and Eastern Europe for several reasons: firstly, this

will allow the countries of this region to receive additional funds and resources for the development of their infrastructure, which will make it possible to expand a common trade between China and the EU; secondly, for countries that are not members of the European Union and do not have access to its financing, this is an excellent opportunity to narrow the development gap of countries compared with the European Union and subsequently give them more chances to join the union. Even though at first this initiative seems to be very attractive for all participants: for China – the possibility of entering the European market, for the EU – improving trade with the Asian partner, for promising candidates for EU membership – investments in lagging industries, the project has some negative for Europe (members and non-EU members) effects. One of the reasons is that, in most Chinese projects, Chinese personnel are primarily involved, which does not allow creating additional jobs for Europeans.

It is necessary to take into account that the Belt and Road Initiative is not exclusively economic in nature, and is also a manifestation of China's soft power: both «16 + 1» project, and One Belt – One Road are promoted not only by the investment of infrastructure projects, but also by joint projects in the fields of education, culture, scientific research, and so on. But is China's soft power the only reason for the European Union's lack of confidence in the BRI?

For the European Union, the initiative is perceived as direct measures of China's expansion policy in many countries of the world, including in Europe. This fear stems from the experiences of other, poorer, countries that have fallen into a debt trap due to investments in the projects of the New Silk Road there. China also acquires major infrastructure projects in Europe, for example, ports in countries such as Greece, Italy, Belgium, the Netherlands and Spain, which creates unrest among EU governments (Fraser, 2018).

Chinese investment in Portugal reached 12 billion euros and made up 3.6 percent of the country's GDP. Acquiring a large number of strategically important infrastructure facilities throughout Europe, China invests even in those projects that seem to be unprofitable and not sufficiently successful. Portugal opened as a country for investment of People's Republic of China after the difficult economic crisis of 2008, and is one of the countries that signed a Memorandum of Understanding with China regarding the «One Belt – One Road» project.

Portugal is not the only European Union country where the economic relations and investments of the Chinese state are flourishing successfully; a similar way of developing relations is also pursued by Greece. Greece is also a country that has signed a Memorandum of Understanding on the project of New Silk Road, and, just like Portugal, has survived and is still struggling with the consequences of a severe economic crisis. In the case of Greece, China has acquired the ownership of the Greek port Piraeus until 2052 year, this happened when the Chinese company Cosco Group bought 67 percent of the shares of the port of Piraeus, the value of the shares amounted to 368.5 million euros, while the value of the transaction, which includes, in addition, the mandatory investments for the next 10 years, as well as the expected income of the Greek government from this project and dividends and interest amounted to a total of 1.5 billion euros. As in the case of Portugal, China is the owner of the shares of the largest state-owned Greek energy company. In 2017, the

Chinese State Grid Corporation made a deal with a Greek Public Power Corporation (PPC), according to which 24 percent of the ADMIE (Independent Power Transmission Operation) company's shares were transferred to China.

Another Mediterranean country where Chinese investment plays an important role and is trying to make profitable acquisitions is Italy. As is the case with the two previous countries, Chinese investors are interested in energy projects. In 2014, the same Chinese State Grid Corporation took over 35 percent of a CDP Reti holding company, which, in turn, owns 30 percent of the shares in a large company Snam, that is responsible for gas transport (Mathews, 2016).

The problem that the European Union sees in these investments is the countries to which these investments go, because the people in Portugal, Greece and Italy are often skeptical of the European Union and its policies, and the possibility of financing by China is a reason to understand that besides the EU these countries have alternatives to develop profitable projects in their countries, which nurtures a large share of Euroscepticism.

Another problem that concerns the European Union regarding the Belt and Road initiative is how much «green» in fact these investments are not only in Europe, but also in other countries of the New Silk Road. Europe is not sure that the project of One Belt – One Road promotes ideas for sustainable development and the development of a green economy and energy, and for this Europe has its reasons.

The impact of green energy on infrastructure changes along the New Silk Road

One Belt – One Road project is mainly focused on infrastructure improvements in various parts of the world, this is a multi-billion project that has a certain structure for the distribution of finances. The project financing system is produced through several specially created institutions. They include the specially created for the realization of BRI projects Asia Infrastructure Investment Bank (AIIB), which was created at the initiative of PRC, the Silk Road Fund (SRF), and the New Development Bank, a project initiated by the BRICS countries (Brazil, Russia, India, China, South Africa) in 2012, designed to attract resources and investments in sustainable development projects. It is estimated that the approximate ability to finance projects from these three institutions varies in the region of \$240 billion, with priority in financing given to projects dealing

with sustainable development and renewable energy (Mathews, Tan, 2017). So, what is the specific of financing projects for infrastructure re-organization on the New Silk Road?

Asian Bank is one of the most promising development banks of our time. Proposed in 2013 by Xi Jinping to finance sustainable development projects on the New Silk Road, the initiative was supported and already in 2014 an agreement was signed on its association. In 2016, 9 large-scale projects in the fields of energy, transport and water treatment systems were approved, in which 1.7 billion dollars were invested, among which 1,085 million – in the field of energy projects. The largest project invested in 2016 was the project to modernize the electricity supply system in Bangladesh, where 12.5 people had positive effects, for which electricity became more affordable. The project, which received \$ 165 million in investment from the Bank, lay 85 kilometers of electrical cable, which will subsequently improve the working conditions of the local population and ultimately help the country's economic growth.

Another large project concerns Tajikistan, where, together with the European Bank for Reconstruction and Development (EBRD), improvement of the road between Tajikistan and Uzbekistan is funded – the road has needed repairs for more than 30 years: \$27.5 million was invested by the AIIB and EBRD in the field of energy, 3 more projects were approved: the extension of the Tarbela 5 hydropower station in Pakistan, which will help connect the dam-built power station to the main electrical system power grid (co-financed by the World Bank, \$300 million invested). One of the most promising projects of the New Silk Road – Trans-Anatolian gas pipeline, which is designed to supply gas from Azerbaijan to southeastern Europe through Turkey (financed in cooperation with the World Bank, investments totalled \$600 million) (AIIB, 2016). In 2017, since the number of Asian Infrastructure Investment Bank members became 84, the number of approved projects increased to twenty-three, and the amount of investments reached 4.22 billion US dollars (AIIB, 2017). The focus of 2017 for the AIIB was mainly sustainable infrastructure development projects. The Asian Infrastructure Investment Bank has invested 40% of total investments in energy projects, which made it possible to finance 6 energy projects in different countries of the world: Bangladesh, China, Egypt, India (2 projects) and Tajikistan.

The following would like to consider the second institution owned by the Chinese government, the Silk Road Fund. As the name suggests, the fund

was created specifically to invest in projects both in China and in partner countries and regions of the New Silk Road program. The range of investment areas is similar to ABII, and operates on the idea of the proposed Belt and Road initiative, including the development of infrastructure, energy, as well as the promotion of trade and financial cooperation between the countries of OBOR, capital of the Fund is 40 billion dollars (Official Website of the Silk Road Fund, 2019). It is not yet clear whether the Fund accepts a green line of investment, since not all projects are based on promoting sustainable economy and energy. One of the first projects funded by the Silk Road Fund was the hydroelectric power station in Pakistan. China-Pakistan economic corridor is one of the most large-scale areas of the One Belt-One Road project, where \$54 billion has already been invested in future and ongoing projects, many of which are aimed at the energy diversification and energy production through renewable technologies. So, in the project of the Karot hydroelectric power station, which will have a capacity of 720-MW, 1.65 billion US dollars were invested by the Silk Road Fund (Xinhua, 2015). Before moving on to the project, which has become quite provocative for the Silk Road Fund, it is worth noting another 2 projects that fall within the scope of developing sustainable technologies. First is the Yamal LNG project, launched by Russia in cooperation with China.

The project involves the development of liquidified natural gas in the Arctic to replace conventional fuels, which will subsequently lead to fewer emissions to the environment: in this project, the SDF has 9.9 percent of the shares. Another promising investment was made into the Hassyan clean coal project in Dubai. The specific feature of this project is that Hassyan will be the first coal-fired power plant in Dubai, and the station falls under the United Arab Emirates' Clean Energy Strategy 2050, which implies diversification of the energy sector. Specificity of the Hassyan coal power plant technology is in the application of a new «ultra – supercritical» technology, which will allow to generate more electricity with lower carbon dioxide emissions into the atmosphere. According to estimates, this project will provide about 1.3 million people with electricity due to the capacity of the power plant – 2,400 MW (Xinhua, 2015).

And, finally, the third institute of financing infrastructure on the New Silk Road – the New Development Bank (NDB). Founded in 2014, the National Development Bank has a total capital of \$100 billion (Annual Report, 2018), which it successfully implements for projects in the field of

sustainable development and infrastructure in the territory of all BRICS countries. Looking at the list of projects proposed and approved by banks, one can really say about its bias towards green infrastructure, because many projects are being implemented in the field of renewable energy, environmental protection, water purification and so on. Most of the renewable and clean energy projects are implemented in China, which indicates a strong support from the Chinese government, the BRICS countries and the New Development Bank for initiatives and projects to reduce emissions of greenhouse gases by China. One of the latest projects approved by the Bank, which is also one of the most expensive in the field of renewable energy, is a project of natural gas transmission in the province of Jiangxi, where 70% of energy supply depends on coal-fired power plants, and the amount of energy that relies on renewables is excessively small (Annual Report (2018)). As we can see, all three investment institutions are committed to the policy of contributions to green infrastructure and sustainable development policies through investments into projects that support these goals. The AIIB and NDB have already published their official strategies that demonstrate their intentions to adhere to green investment through the provision of financing in such areas as combating climate change, developing sustainable infrastructure, reducing emissions and adhering to the Paris agreement, it is also very important to mention the contribution of these two development Banks into the sphere of clean and renewable energy advancement. So far, it is becoming clear to us that fears about China's non-sustainable investment in projects on the New Silk Road are rather unfounded, because of all the above examples, almost all projects funded by China's created development banks are aimed specifically at developing sustainable infrastructure and renewable technologies not only in China, but also beyond its borders in partner countries along the New Silk Road.

Conclusion

With the introduction of the One Belt – One Road program a new stage has begun for Euro-China relations, and this directly affected the energy supplies between them and among the countries located between them.

The European-Chinese relations are governed by the EU's China strategy of 2013, however, the growing presence of Chinese companies as owners or owners of shares in key European facilities led the EU to adopt an additional document in 2016,

which introduces changes in Chinese investment opportunities.

Building infrastructure on the New Silk Road is beneficial for the EU: building the Trans-Anatolian and Trans-Adriatic gas pipelines will allow receiving gas directly from Azerbaijan, which will help diversify the number of exporters. In addition, China is investing in the development of energy infrastructure in Eastern Europe, which significantly reduces the amount of funding from the European Union.

The development of infrastructure facilities throughout Central Asia is driven by China's need for fossil fuel supplies, and investing in European projects allows not only giving jobs to Chinese citizens, but also to get an easy access to the European market to retail their products and export their technologies.

In the environmental sphere, both China and the EU are interested in reducing emissions and improving their environment, as well as meeting the Paris Agreement commitments and developing energy efficiency, which is confirmed by the preference for financing clean energy projects from the three main multi development banks of the New Silk Road: ABII, SRF and NDB (Annual Report, 2018).

On the new Silk Road the countries of Central Asia are, first of all, a transit zone for the entry of energy into China, therefore the entire key infrastructure is located in this territory.

Interest in the Central Asian region stems from both China and the European Union: a region rich in minerals and located in a zone of strategic political importance, Central Asia is a very dynamic region, which can be described as productively developing, but at the same time prone to a corruption, outdated infrastructure, the focus of the economy on the extraction of minerals, disputes over water resources sharing and so on.

Therefore, the investment in the region is a risk for both China and the EU: all sorts of disputes between countries pose a threat of a complicated connectivity on the New Silk Road, which creates a security threat for infrastructure projects and buildings – this threat is relevant for Europe, and for China, since many projects are co-financed, and both entities benefit from the New Silk Road projects.

The focus of infrastructure investments in Central Asia affects roads and transport to improve trade relations between the regions of the New Silk Road, as well as energy communications to supply China, which is in need of energy, and also to transfer energy resources to the European Union.

China's interest is mainly in the traditional forms of energy in Central Asia: due to the great lack of local electricity, China has to import additional resources, mainly from the neighbouring region of the Central Asia. This has an impact on the scope of projects implemented in the countries of the region – most of them are being carried out in the field of black or «dirty» energy.

On the other hand, renewable energy in the region of Central Asia has a commercial interest, and the development of energy efficiency will benefit not only the infrastructure development of countries, but also reduce the amount of greenhouse gas emissions. In addition, for China, it is an opportunity to export their green technologies abroad.

Being committed to the development of environmentally friendly agriculture and having already implemented bilateral agreements in this sphere, as well as promoting this initiative through the Shanghai Cooperation Organisation (SCO), it can be noted that projects in the green sphere have great potential in Central Asia (Ghiasy Zhou, 2017).

China is investing sufficient funds into the development of partner countries, again by and large in projects related to the transition to clean energy. Investment zones cover not only the energy sector, but also the transport sector, the development of

transport infrastructure through the construction of roads, rail lines, numerous bridges – all to improve trade and economy.

The transport sector is one of the most polluting of the environment, and also requires the development of new, sustainable technologies for their reduction. According to a recent study by European experts, emissions on the railway route from China to Europe can significantly reduce when using electric trains, and provided that electric trains can take power sources from renewable energy sources, it is possible to completely get rid of carbon dioxide emissions throughout the route. Although this initiative will require infrastructural changes along the railway lines passing through China, Russia, and Kazakhstan, this initiative will help reduce CO₂ emissions by 25 tons from each twenty-foot equivalent.

With the adoption of the «One Belt-One Road» initiative by the Chinese government, a new stage of development begins for European-Chinese relations, and the energy component of these relations will play an important role not only for these two actors, but also for the countries located between Europe and China. Key partners on the New Silk Road include such strategically important regions of the Caspian basin and Central Asia.

References

- Advisory Council on International Affairs (2006. 08.03) Energised Foreign Policy: security of energy supply as a new key objective: [<https://aiv-advice.nl/6bt/publications/advisory-reports/energised-foreign-policy-security-of-energy-supply-as-a-new-key-objective#press-releases>]
- Annual Report (2018) Investing for Impact. New Development Bank (NDB): <https://www.ndb.int/data-and-documents/annual-reports/>
- AIIB (2016) Annual Report and Accounts. Asian Infrastructure Investment Bank. Connecting Asia for the future: [https://www.aiib.org/en/news-events/news/2016/annual-report/.content/download/Annual_Report_2016_Linkage.pdf]
- AIIB (2017) Annual Report and Financials. Asian Infrastructure Investment Bank. Financing Asia's Future. [<https://www.aiib.org/en/news-events/news/2017/annual-report/common/pdf/AIIB-Annual-Report-2017.pdf>]
- Behera A., Gubaidullina M. (2018) Between China and India: Energy Dimension of Kazakhstan // *International relations and international law journal*. №1 (81). – Pp.4-18
- Boden, T.A., Marland, G., and Andres, R.J. (2017). National CO₂ Emissions from Fossil-Fuel Burning, Cement Manufacture, and Gas Flaring: 1751-2014, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, doi 10.3334/CDIAC/00001_V2017 [<https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data#Country>]
- BP Statistical Review (2019) Insight – China. China's energy market in 2018// [<https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/country-and-regional-insights/china.html>]
- Buckley, Tim&Simon, Nickolas (2017) China's Global Renewable Energy Expansionю – Institute for Energy Economics and Financial Analysis, January
- China State Grid quietly builds Mediterranean power network (2014) In: Reuters: [<https://www.reuters.com/article/utilities-mediterranean-china/china-state-grid-quietly-builds-mediterranean-power-network-idUSL6N0QB5NF20140810>]
- China and Eastern Europe as Parts of the New Silk Road (2016). Ed. Mikheev V.V., Shvydko V.G., eds. – Moscow, IMEMO, 70 p.
- Ekman, Alice, Nicolas, Françoise, Seaman, John, et al. (2017) Three Years of China's New Silk Roads: From Words to (Re) action? *Études de l'Ifri*, Ifri, February
- EU-China 2020 Strategic Agenda for Cooperation (2013) In: Official website of European External Action Service: [<https://eeas.europa.eu/sites/eeas/files/20131123.pdf>]

- EU-China Summit Joint Statement (2019) In: Official website of European Council: [<https://www.consilium.europa.eu/media/39020/euchina-joint-statement-9april2019.pdf>]
- Fraser, Cameron (2018) Europe’s Answer to China’s Belt and Road // TheDiplomat.com: [<https://thediplomat.com/2018/09/europes-answer-to-chinas-belt-and-road/>]
- Ghiasi, Richard, Zhou, Jiayi (2017) The Silk Road Economic Belt: Considering Security Implications and EU-China cooperation prospects. Stockholm International Peace Research Institute, 60 p.
- Global Energy Statistical Yearbook (2018) In: Enerdata: [<https://yearbook.enerdata.net/total-energy/world-consumption-statistics.html>]; Global Greenhouse Gas Emissions Data. United States Environmental Protection Agency: [<https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>]
- Gubaidullina M. (2012) «Green Bridge»: environmental initiative of Kazakhstan for the development of Europe-Asia-Pacific Partnership In: International relations and international law journal. № 2 (86). – Pp. 3-11; Gubaidullina M. (2015) «Bridges» convergence of the EU – Central Asia – SCO: security factor in the development of dialogue. In: Contemporary political Society. Ulan-Bator, Vol. 3, No1. – Pp. 134-158
- Jiangxi Natural Gas Transmission System Development Project (2018) In: Official Website of the New Development Bank: [<https://www.ndb.int/jiangxi-natural-gas-transmission-system-development-project/>]
- Joint Statement on the Implementation of the EU-China Cooperation on Energy, April 9 (2019). In: Official website of European Commission: [https://ec.europa.eu/energy/sites/ener/files/documents/joint_statement_on_the_implementation_of_the_eu_china_cooperation_on_energy_en.pdf]
- Kong, Bo, Gallagner, Kevin P. (2016) The Globalization of Chinese Energy Companies: The Role of State Finance. – Boston University: Global Governance Initiative, 35 p.
- Mathews, John A. (2016) China’s Continuing Renewable Energy Revolution – latest trends in electric power generation. In: The Asia-Pacific Journal, Vol.14, Issue 17, N 6, 01 Sept. [<https://apjjf.org/2016/17/Mathews.html>]
- Mathews, John A., Tan, Hao (2017) China’s New Silk Road: Will it contribute to export of the black fossil-fuelled economy? // The Asia-Pacific Journal, Volume 15, Issue 8, № 1
- Movkebayeva, G. (2013) Energy cooperation among Kazakhstan, Russia, and China within the Shanghai cooperation organization. In: Russian Politics & Law, Routledge, Vol. 51, N1/1. – Pp. 80-87
- Official Website of the Silk Road Fund, Overview.: [<http://www.silkroadfund.com.cn/enweb/23775/23767/index.html>]
- Palonkorpi, Mikko (2017) Energy Security and the Regional Security Complex Theory. In: Reader Energy Security in International Relations Theories, Higher School of Economics: [<https://www.hse.ru/data/339/636/1233/ReaderforLecturesOnEnergySecurity.doc>]
- Patnaik, Ajay (2013) Energy and the State in Central Asia. In: R. Doraiswamy eds. Energy Security: India, Central Asia and the Neighbourhood, New Delhi: Manak Publications
- Renewable Energy Statistics. Eurostat (European Commission) (2019): [https://ec.europa.eu/eurostat/statistics-explained/index.php/Renewable_energy_statistics#Share_of_energy_from_renewable_sources_in_gross_final_consumption_of_energy]
- Sherwin, Kara (2016) China Is Outsourcing Its Pollution//Foreignpolicy.com: [<https://foreignpolicy.com/2016/12/07/china-is-outsourcing-its-pollution/>]
- Showstack, Randy (2018) China Catching Up to United States in Research and Development: [<https://eos.org/articles/china-catching-up-to-united-states-in-research-and-development>]
- Slaughter, Anne-Marie (2011) International Relations In: Principal Theories. Princeton.edu: [https://www.princeton.edu/~slaughtr/Articles/722_IntlRelPrincipalTheories_Slaughter_20110509zG.pdf]
- Towards a climate-neutral Europe: EU invests over €10bn in innovative clean technologies European Commission (2017). In: European Commission Press Release Database: [http://europa.eu/rapid/press-release_IP-19-1381_en.htm]
- Xinhua (2015) Silk Road Fund to invest in hydropower project in Pakistan // China.org.cn: [http://www.china.org.cn/business/2015-04/21/content_35373868.htm]