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# China's energy cooperation within the 17+1

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**Abstract:** The paper analyses Chinese energy cooperation within the 17+1 Cooperation Framework. In order to present the broader political context of this collaboration, special attention is given to Chinese energy interests and EU energy policy. Since the existing databases about Chinese energy projects in 17+1 were incomplete, the authors created a new dedicated database. The authors address key questions about the principal projects involved such as: what are the countries and energy subsectors in which China invests the most; what are the main obstacles in existing energy cooperation; does this kind of energy cooperation have a positive impact on the development of 17+1 members and is China successful in fulfilling its geo-economic strategy in 17+1 in regards to its overall energy policy. The authors find that China is primarily interested in building coal-fired power plants, but results remain below expectations, with performance affected by a combination of EU opposition, project costs, and internal political issues in the 17+1 countries. The nuclear energy subsector is where Chinese enterprises have experienced some of their greatest failures, while the hydro energy subsector still has potential for future development. In addition, China is strongly investing in green energy and slowly but surely achieving its energy policy goals as part of its broader geo-economic strategy. The authors conclude that the overall effects of cooperation in the energy field are promising, but there is still space for further improvement.

**Key words:** China, 17+1, energy policy, energy cooperation, energy projects.

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## China's Going Global Strategy and the 17+1

For many decades, China has been the world's largest recipient of foreign direct investment and has benefited immensely from this process. However, as the country's economy grew, it saw its chance to reverse this trend and make its own investments abroad. Initially focusing on Asia and Africa, China seized the opportunity to invest in other regions, such as the EU and the USA. Central and Eastern European countries (CEECs) were not China's first choice of investment destination, but this did not deter China from considering this area as a potential market. The first phase of Chinese involvement in the CEECs started in 2009, and, by 2011, China had collected sufficient information about trade, investment, and lending opportunities available in this market that it could use for a variety of development projects. The decision to engage with the CEECs was reinforced by the 2009 economic crisis, which dealt a severe blow not only to the EU but to other European countries as well, giving China opportunity to seek new partners within Europe that were trying to recover their economies. Consequently, the 16+1 cooperation framework was officially founded in 2012 in Budapest, as a result of the Chinese "Going Global" strategy that marked a new era in China's development. Cooperation between the CEECs and China has today evolved far beyond its limited beginnings, with increasing levels of trade, investments, and infrastructure and energy projects.<sup>2</sup>

The 17+1 Cooperation Framework (hereinafter 17+1) has been labelled as a mechanism for "promoting a new type of international relations" (Liu 2017, 21), which has focused attention on transit countries sitting between East and West. Although numerous studies focus on China-CEECs relations in the different domains of cooperation, there is a noticeable gap in literature when it comes to the domain of energy cooperation within 17+1. This is the main reason why this analysis was conducted.

Chinese energy diplomacy, as it was previously said, is often described as "an important part of [China's] 'going out' strategy and national development strategy" (Yu 2016, 11) and an extension of Chinese national interests, and they seemed to be perceived as significant geo-economic tool for reshaping global

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<sup>2</sup> The original group comprised 16 Central and Eastern European countries (CEECs): Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, North Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia and Slovenia. Greece joined in 2019, when what had hitherto been the 16+1 became the 17+1. The 17+1 countries are all part of China's Belt and Road Initiative (BRI), and 17+1 was subsumed into it. 17+1 and CEECs are being used as synonyms in this paper.

energy governance. Among the key goals of the Chinese 13th Five-Year Plan are greater environmental protection and the intention to better position the country on the global economic stage through greater investment and active participation in global economic governance (Kennedy and Johnson 2016, viii). In other words, with the shift in Chinese foreign policy and the country's re-opening to the world, geo-economic projects that are part of the Belt and Road Initiative (hereinafter BRI) now serve to announce China's increased presence in the economic sectors of participating countries. Energy sectors of the individual 17+1 countries are among key areas for Chinese investment in these states, with specific emphasis on the building and revitalisation of critical energy infrastructure (Yu 2018).

In recent years, China's economic penetration into various parts of the world has raised many doubts and generated much research, but some questions remain unanswered. Increased Chinese presence worldwide has provoked questions about the political meaning of the country's behaviour and which security concerns this raises, leading even to a "China Threat" narrative (Rogelja and Tsimonis 2020). Therefore, and in a sense responding to the observations of these authors that case-by-case examination of the deals is missing (Rogelja and Tsimonis 2020, 132), this paper examines China's energy cooperation as part of the cooperation within 17+1 in a case-by-case manner.

Chinese involvement with the European Union (EU) and the 17+1 countries and their energy sectors has raised some controversial questions, such as the impact of this collaboration on the European energy market and security, overseas investments, the balance of power, and climate change (Gueldry and Liang 2016, 218). The 17+1 has significant geopolitical and geo-economic implications, and its implementation is expected to result in numerous investments into energy (and other sectors as well) in the 17+1 countries. As economic involvement and the number of proposed investments are the most controversial aspects of Chinese energy cooperation within the 17+1 group, this paper also aims at identifying and analysing the overall nature and results of Chinese energy cooperation with the 17+1.

## **China's energy cooperation within the 17+1: The concept of energy interests and the context of the EU energy policy**

Data show that Chinese direct investment in the EU "increased sharply since 2010, and since 2013 in particular" (Bickenbach and Liu 2018, 15), with 2013

marking the very beginning of the BRI. However, there are insufficient data on the nature of Chinese economic involvement in the energy sectors of the 17+1 in more recent years. The 17+1 consists of both EU Member States and candidate countries for EU membership and is often seen as a “useful complementary asset” that could play a positive role in China–EU relations (Ge 2019, 253). The geopolitical significance of the 17+1 is usually underlined by referring to these countries through the concept of the *intermarium*, the area situated “between the Black and Baltic seas” (Chodakiewicz 2012). As this notion emphasises strong traditional geopolitical interests of diverse international actors in this region and its “proposed large-scale development of transportation and energy infrastructure” (Pavličević 2019, 250), the significance of the 17+1 needs to be highlighted in the context of China’s growing interest towards this region, especially in terms of energy.

Energy cooperation between China and the 16+1, as it then was, officially was announced in 2016, when the Center for Dialogue and Cooperation on Energy Projects (CDCEP) was established during a high-level meeting between the heads of state and government of CEECs and China. The main goal of this platform was to network academia, businesses, institutions, and governments of China and the 16 CEECs with the aim of promoting and exchanging best practices that foster shared development. The Dubrovnik Guidelines for Cooperation between China and CEECs were adopted during the latest summit dedicated to promoting and deepening relations between China and the 17+1 Cooperation Framework in 2019, with the objective of providing closer directions for mutual cooperation. Energy was specifically highlighted, with China stating that “technical exchanges as well as energy cooperation planning and research in the area of energy including exploration of cooperation in the field of green energy and biological energy by the Center for Dialogue and Cooperation on Energy Projects in Bucharest” were of the utmost importance for any upcoming projects (*China Daily* 2019). As the Dubrovnik summit took place in 2019, and in 2020, the COVID-19 pandemic started, the timeframe for assessing the effects of the Guidelines on the CDCEP is still very short.

As one of the world’s largest economies, China is facing a variety of energy security challenges. Therefore, “Chinese energy policies must be viewed as the results of balancing conflicting aspects of energy security” (Liedtke 2017, 662). More specifically, China is both the world’s largest consumer of energy, in particular coal, and the largest CO<sub>2</sub> emitter (Umbach and Yu 2016; Liedtke 2017) but is also simultaneously strongly committed to investing in green energy and technology, green development, and renewable sources (CCTP 2016; ISDP 2018; EC JOIN[2019] 5 final). This “balancing” between different energy subsectors

needs better explanation of the key drivers for such behaviour, and, to gain this insight, it is necessary to more comprehensively understand China's energy interests by examining its key strategic commitments. In this context, the case of the 17+1 should serve as a basis for identifying key policy drivers that are "underpinning Chinese energy investments and policy approaches" (Liedtke 2017, 661) towards countries participating in the BRI. Here, relations between China and the 17+1 countries could be seen as a "fertile ground for studying not only regional policies of China but its evolution as a global power and the evolving context of its relationship with the world" (Vangeli and Pavličević 2019, 362).

Chinese economic involvement in the energy sectors of the 17+1 countries should be understood in the context of China's 13<sup>th</sup> Five-Year Plan, as part of a broader pragmatic strategy that aims at achieving Chinese economic and environmental goals (Liedtke 2017, 659). The set of relevant strategic documents on China's overall development, and energy policy in particular, also states similar goals. For instance, the two White Papers on China's energy policy (published in 2007 and 2012, respectively) express its commitments to fossil fuel supply and technological innovation, on the one hand, and pursuit of renewable sources and green energy, on the other. This energy policy has shaped China's international energy cooperation within the BRI (and other parts of the world as well). Put differently, even though 17+1 countries differ by economic and energy development, they nevertheless share some aspects relevant to China's overall energy strategy within the BRI: upstream and downstream industries, development and processing of coal mining products, and development and utilisation of renewable energy and new energy (Hou and Liang 2018, 97). As a significant part of China's geo-economic strategy, the country's energy cooperation within the 17+1 includes the pursuit of numerous projects, such as "the development of onshore and offshore oil and gas fields, coal mines and coal-fired power plants, grid networks, other energy infrastructures and the expansion of renewable energy sources" (Umbach 2019, 3). Since connectivity is a key objective in energy cooperation, particular emphasis is placed on economic activities and greater regional integration (Yu 2018, 252). Thus, China's involvement in the construction of massive coal, hydro, nuclear and green energy infrastructure is of the utmost analytical importance for Chinese actions in the energy sectors of the 17+1 countries.

Although China has recently stepped-up efforts to combat climate change and pollution, its involvement in building coal-fired power plants worldwide should not be ignored. So, what is the key reason for this behaviour? Edward Cunningham, an expert on China at Harvard University, emphasises that China's push for coal is not surprising, especially as China, the world's largest coal

consumer, knows how to build coal plants (Inskip and Westerman, 2019), making investment in coal a sound business practice for Chinese firms. Against this backdrop, the paradox is that China has scaled back its coal industry at home, but not in other countries under the BRI umbrella. Whilst leading the field in decarbonisation domestically, China simultaneously continues to invest in fossil fuels (primarily coal), mostly in BRI countries (Shearer, Brown and Buckley 2019). According to China's Global Energy Finance database, China has invested more than \$51 billion in the coal industry since 2000 (BU GDPC n.d.). As "most coal funding outside China is being provided by public Chinese banks that back Chinese state-owned enterprises to build the plants with a largely Chinese workforce" (Brown and Buckley 2019), it is unsurprising that "Chinese engineers, metalworkers and laborers who built coal-fired power plants must be kept employed" (Inskip and Westerman 2019), primarily in countries of the BRI and the 17+1. Nevertheless, it is worth noting that the 17+1 countries have already developed this infrastructure owing to their extensive mineral deposits and is having significant share of fossil fuels within its energy-mixes, so the logical move is to revitalise this energy capacity (given its short and medium-term benefits).

By contrast, China's energy strategies and plans emphasise investment in green energy, renewable sources, and green technology as the other side of the coin of Chinese energy policy. The Chinese Government's efforts to promote green energy have resulted in the People's Republic of China replacing the US as the top investor in the green sector (Pareja-Alcaraz 2017, 607). According to the latest report by the Institute for Energy Economics and Financial Analysis, as of 2018, China's New Development Bank (NDB) has approved 23 projects, valued at \$5.7 billion, with a "focus on renewable energy, energy conservation, water access, and sustainable development infrastructure" (Shearer, Brown and Buckley 2019, 22). Green energy and green vehicles are also seen as key industries of the Made in China 2025 plan (ISDP 2018). China's Energy Development Strategy Action Plan (2014–2020) also puts forward green energy as a crucial priority for the period. In addition, China has also expressed its commitment to promoting clean energy cooperation with the 17+1 countries, primarily for wind and solar power (SC PRC 2019). Finally, the upcoming 14th Five-Year Plan (for the period 2021–2025) is expected to bring green energy and low-carbon development under China's central policy priorities (Wong 2020; Yixiu and Zhe 2020).

As already mentioned above, the 17+1 includes the Member States and the EU candidate countries likewise, the latter being simultaneously part of the European Energy Community and, therefore, committed to harmonising their national legislation with the EU *acquis communautaire* and integrating their

national energy systems with the European energy market.<sup>3</sup> In that sense, the EU imposes itself as the most significant intervening variable when considering the broader political and economic functioning of the 17+1. Therefore, some facts need to be underlined when this analysis is placed in the wider context of EU energy policy. In recent years, the EU's energy policy has focused on decarbonising Member States' economies and strongly emphasized climate actions and green energy. China is also building economic relations with the EU, seeing the European Union as an "one of the most important trade and investment partners" and hoping that "both sides will contribute to the long-term, steady and in-depth development of their economic and trade relationship" (MFA PRC 2014). However, no official documents have been signed thus far between the European Commission and China, but the dialogue on energy cooperation is very active.<sup>4</sup> The key outcome to date has been the creation of an EU-China energy cooperation platform in 2019 in order to:

(...) enhance EU-China cooperation on energy. In line with the EU's Energy Union, the Clean Energy for All European initiative, the Paris Agreement on Climate Change and the EU's Global Strategy, this enhanced cooperation will help increase mutual trust and understanding between EU and China and contribute to a global transition towards clean energy on the basis of a common vision of a sustainable, reliable and secure energy system (EC ECP 2019).

We drew on the studies and trends cited above to define the main questions that guided our research:

- (1) What are the main energy subsectors and countries in which China has invested the most and to what extent have these investments been successful?
- (2) What are the main obstacles for Chinese energy cooperation within the 17+1?
- (3) Has energy cooperation between China and the 17+1 positively affected the development of energy sectors in the 17+1 countries?
- (4) Is China successful in fulfilling its geo-economic strategy in regard to its energy policy in the 17+1?

Besides answering the research questions, one of the aims of this paper is to develop a transparent database with Chinese energy projects in the CEECs (as a snapshot of the state of play) that will provide clear data for further investigation.

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<sup>3</sup> More details about EU accession criteria relevant for energy security applicable to candidate countries are available in: Stanojević, Jeftić and Obradović 2020.

<sup>4</sup> The list of key documents shaping the future of EU-China energy cooperation is available at: EC 2020.

Analysis founded upon these research questions will serve as the basis for describing and explaining the state of play of Chinese energy cooperation with the 17+1 that can further contribute to the overall interpretation of energy cooperation Chinese energy cooperation within the 17+1 group.

## Methodology

The analysis will employ several steps to answer the questions presented above. As noted, unreliable databases and a wide gap in literature in this area have resulted in a lack of operational data that could be used for further analysis. As official data is either non-existent or affected by language barriers, media articles have been our dominant sources of information about every single energy project between China and the 17+1 countries.<sup>5</sup> To ensure objectivity, each source was checked multiple times. Furthermore, collecting data for an analysis of descriptive statistics proved difficult, given the research timeline of only six years (2014–2019). We took into account only projects that were negotiated after the establishment of the 17+1. Thereafter, these findings were compared with data on Chinese energy projects in the 17+1 countries in the period before its establishment, to determine whether the initiative had produced positive effects on these countries.

Considering the power of the EU to intervene in its CEEC Member States energy policies, further analysis will employ this fact. Nevertheless, other factors affecting energy cooperation between China and 17+1, such as national energy-mixes and environmental concerns, are by no means excluded from the considerations and these factors will be also taken into account when analysing case-by-case to create an overall image on the main obstacles tackling this energy cooperation. In addition, Greece was excluded from the analysis. The main reason was that Greece joined the platform in 2019, which makes it irrelevant for the period observed. However, we briefly reviewed Chinese energy projects in Greece to gain an understanding of whether China's investment in the country could be relevant for future analysis.

The starting point for our database of projects was the China Global Investment Tracker, maintained by the American Enterprise Institute (AEI n.d.). Although this database proved to be insufficient and unreliable, it contains more

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<sup>5</sup> The full list of references used to make database could be find at the end of paper under the Database references.

data than other sources, and was therefore used as a starting reference. AidData (RLWM n.d.) was also consulted, albeit with much reservation as its coverage of Chinese investments ends in 2014. We referred to those datasets as the starting point, as we intended to assess all aspects of Chinese energy policy towards the 17+1 during the period observed. Accordingly, we looked not only at completed projects, but also at any agreements, memorandums, and success stories and failures. To achieve this goal, we broadened the scope of our research and analysed every single energy project that we were able to trace and connect to Chinese companies, going beyond English-language sources to also include national sources from each country where Chinese projects are ongoing. In doing so, we also looked at national news and analyses in order to discover the main internal (national) obstacles within China-17+1 energy cooperation as well.<sup>6</sup> The aim was to produce more transparent data on those projects so as to clarify Chinese energy policy and its results in practice.

It ought to be emphasized that uncovering contract values was the most difficult aspect of this research. We had incorrectly assumed the main issue would be only finding data for non-EU countries, but that was not the case. Furthermore, announcements of the energy projects could be found in at least twenty sources, but financial values were missing from the majority of them. Even where values were available, different sources referred to different numbers.

## Results and discussion

This section analyses energy projects in the 17+1 group. Apart from Greece, the analysis also excludes North Macedonia, Estonia, Lithuania, Latvia, and Slovenia, as these five countries have no energy projects in the period observed. For the purposes of this paper, a new database with Chinese energy projects in 17+1 is made, and the database is presented at the end of this paper in a form of an Appendix. Seven categories of information are provided for each project in this database: Country, Project (name of each individual project), Chinese Partner/Investor, Type of Project (loan, greenfield, joint venture, etc.), Energy Subsector, Status, and Value. The “Status” category indicates the stage of each project. These may be: *Completed* (construction completed); *Finalised* (acquisition completed); *Active* (construction in progress); *On hold* (awaiting EU approval; delays in finalising agreements; delays with court procedures; or

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<sup>6</sup> This research uses sources created no later than February 2020.

delayed financing for completion); *Negotiations ongoing* (projects at various stages of negotiations); and *Unsuccessful* (projects where one partner has withdrawn). In the following analysis, we used at first country approach, and then we analysed the structure of those energy projects.

The results and discussion are given in the following text, and are sorted according to previously stated research questions. Worth of notion is the fact that the additional part of the analysis dedicated to Greece follows the research questions. Greece recently joined the format 16+1 – making it 17+1 – and as such could not be part of this analysis. However, future research will include Greece, as a new 17+1 member, so the authors will present data that are available so far.

*The main 17+1 energy subsectors and countries  
in which China has invested the most*

Bosnia-Herzegovina leads the field with eight projects. Poland and Serbia come next with five each, whilst Hungary has three energy projects with Chinese involvement. Whereas projects in Poland, Serbia, and Hungary were mainly successful, most initiatives in Bosnia-Herzegovina failed to leave the drawing board (see Table 1).

*Table 1: Number of energy projects applied for by Chinese companies  
in the countries of the 17+1 by project status*

Country	Number of energy projects applied for by Chinese companies	Project status
<b>Albania</b>	1	finalised
<b>Bosnia and Herzegovina</b>	8	2 actives, 3 on hold, 3 negotiations ongoing
<b>Bulgaria</b>	2	1 on hold, 1 negotiation ongoing
<b>Czech Republic</b>	1	finalised
<b>Croatia</b>	1 (1+1)	on hold
<b>Hungary</b>	3	1 completed, 1 active, 1 finalised
<b>Montenegro</b>	3	1 unsuccessful, 1 completed, 1 negotiation ongoing
<b>Poland</b>	5	4 finalised, 1 on hold
<b>Romania</b>	4	2 unsuccessful, 2 negotiations ongoing
<b>Serbia</b>	5	3 active, 1 unsuccessful, 1 negotiation ongoing
<b>Slovakia</b>	2	2 unsuccessful

Source: Authors' compilation of the data reviewed.

There are in total six projects concerning thermal power plants. One is active (Serbia's Kostolac TPP), and one is at the beginning stage (Bosnia Tuzla TPP), whereas the rest are on hold or subject to ongoing negotiations. In addition, according to available data, we have the greatest potential and real Chinese investments in this subsector. The main target are Balkan countries, since they have natural resources to build or modernise thermal power plants (TPP), and they are not EU members, so the procedures for applying are easier. Serbia for example used its position as a non-EU state to avoid a public tender for selecting the construction company for Kostolac TPP. In practice, Serbia agreed to use a Chinese loan, Chinese construction company and their workers to do the job, even though it was not according to Energy Community obligations.

The Tuzla TPP project remains active but has been listed in Appendix as "on hold" due to EU objections over state warranties for the Exim Bank's loan (Đugum 2019). That being said, the Bosnia-Herzegovina Government is eager to complete this facility, especially as Units 3, 4 and 5 at Tuzla are set to be phased out, resulting in an urgent need for new production capacity. In addition, the Banovići TPP is currently on hold as the Bosnian Government has proven unable to find local banks willing to extend finance. Facing similar problems as the Tuzla TPP, Gacko TPP is also currently on hold. In Romania, Government has been negotiating a joint venture in Rovinari TPP for several years with China Huadian Engineering and has signed multiple memorandums of understanding, each time with changed conditions (*Romania Insider* 2019). According to the Romanian Government, this project is a necessity "because countries energy system is dependent on the plants of the Oltenia Energy Complex",<sup>7</sup> while a recent study showed that "energy losses from the shutdown of coal-fired power stations could not be recuperated by means of domestic production and energy imports" (Dulămiță and Bird 2020). In Serbia, Power China SEDC is interested in Štavalj TPP, and negotiations are still ongoing regarding this project (SES n.d.). China Machinery Engineering Corporation (CMEC) put in a bid for the reconstruction of Unit 2 in Pljevlja TPP (Montenegro) but did not win the tender. Finally, in the Mintia-Deva TPP case (Romania), the Chinese company withdrew from the modernization project of this TPP.

Hydropower plants are also a point of interest of Chinese companies, once again in the Balkan countries. Chinese companies applied for several hydropower projects in Bosnia-Herzegovina: the Dabar hydropower plant (HPP), HPPs on the Drina River (Buk Bijela, Foča, and Paunci), and four smaller HPPs (three on the

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<sup>7</sup> Rovinari TPP is part of this complex.

Bistrica River and one on the Janjina). The Dabar HPP is a specific case as the tender attracted many interested companies from a variety of countries (*Direkt* 2019).<sup>8</sup> According to official information, a Chinese company submitted the winning bid, but another Chinese firm and a Slovenian company, which also put in bids, sought a review of the tender from the Government, putting the whole project's beginning postponed. The second project is the construction of three HPPs in Buk Bijela, Foča, and Paunci on the Drina River, with China National Aero-technology International Engineering Corporation (AVIC-ENG) negotiating with the Government over this investment (Spasić 2019). The same company is also interested in building four small-scale HPPs, three on the Bistrica, and one on the Janjina (Spasić 2019). In Montenegro, in March 2019, Norinco submitted documentation for the construction of HPP on the Morača River to the Montenegrin Government. This project consists of building eight HPPs in a cascade arrangement on the Morača, which will be financed by a concession. The negotiations have been going on for several years (*Investitor* 2019). In Slovakia, China National Nuclear Corporation applied for the construction of a hydroelectric plant on the Ipel River, but that was unsuccessful.

Tellingly, the number of alternative energy (green energy) projects is increasing, and these ventures are proving to be the most successful (nine out of fourteen). Chinese companies have been investing in all types of green energy, mainly wind turbines, solar energy, and gas and geothermal power stations (see appendix). Since decarbonisation is a mainstay of the EU's energy policy, the Union has not interfered in Chinese investment in this field. As a matter of fact, it could be said that "a convergence of policy frames between China and the EU" occurred in the period analysed (Gippner and Torney 2017, 649). At the same time, it ought to be noted that investments in, and profits from, these forms of energy are lower than for either nuclear or coal (see Table 2).

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<sup>8</sup> The bidders in this tender were China Gezhouba Group Co. Ltd.; the Serbian subsidiary of China International Water & Electric Corp.; Sinohydro Corporation Limited; and Slovenia's Riko.

*Table 2: Number of energy projects applied for by Chinese companies in the countries of 17+1 by energy subsectors*

Energy subsector	Number of energy projects applied for by Chinese companies	Potential value of projects	Number of successful projects	Value of successful projects
Thermal power plants	8	€3.925bn+ 1N/A	2	€1.339bn
Hydro power plants	5	€765mn+3N/A	1	€265mn
Nuclear power plants	4	€17bn+1N/A	/	/
Green energy	14	€729mn+6N/A	9	€410mn +4N/A
Oil	2	€442.3+N/A	1	€442.3mn
Mixed	3	€633mn	2	€403mn
<b>Total</b>	<b>36</b>	<b>more than €23.5bn</b>	<b>15</b>	<b>more than €2.9bn</b>

Source: Authors' compilation of the data reviewed.

In the nuclear energy sector, Chinese companies bid for new construction or joint ventures in Poland, Romania (Cernavoda), Bulgaria (Belene), and Slovakia, and all four were unsuccessful, even though they had appeared highly promising in the beginning. In case of Belene, the Bulgarian Government announced it wanted to keep a “blocking stake in the venture and be involved in the site, the nuclear reactors, and the acquired licenses” (Tsolova 2019). However, Bulgaria does not wish to offer state guarantees for continued long-term purchases of electricity at subsidised prices, which is the main reason why the negotiations are still ongoing. China General Nuclear Power Company (CGN) applied for the construction of Units 3 and 4 at *Cernavod*, Romania’s sole nuclear power plant. According to reports, the plan was to set up a joint venture in which CGN would have a 51-percent stake and Romania’s Nuclearelectrica 49 percent (W/N 2019). The negotiations remained ongoing, because of so many changes within Romanian Government – five prime ministers led the negotiations within two and a half years (Popescu and Brînză 2018, 32). At the end of 2019, media reports appeared about Romanian’s intention to cooperate with the US in the nuclear energy sector (Brînză 2019), and in early 2020, the Romanian Prime Minister announced Romania would not continue working with

Chinese firms (NEI 2020). In Slovakia, Enel Produzione, Italian company who was the owner of nuclear power project within Slovenske Elektrarne, was negotiating with Chinese company to sell that plant. The dispute between Slovakian Government and Enel Produzione stopped this transaction (Chang 2015). In Poland, Government repeatedly changed its plans on nuclear power plant project, which resulted in the Chinese firm ultimately withdrawing.

In the field of gas and oil, Chinese companies only applied for two acquisitions. Albania has already seen the completion of one project, the acquisition of Canada-based Banker's Petroleum Company that held a controlling interest in two Albanian oilfields (Rapoza 2016). The second project was unsuccessful. The Romanian Government approved the purchase of a majority stake in KMG International by China Energy Company Limited. This acquisition was important as KMG International owns the Romanian energy company Rompetrol Rafinare. The plan was to sell a controlling stake of 51 percent to the Chinese company, but the transaction was not completed due to issues at the Chinese firm (Melenciuc 2018).

There are three cases in energy field in which Chinese companies participated, which are combining several types of energy resources in one project. Two are in progress, while one was unsuccessful. The latest Chinese contract in Serbia, signed in January 2020 between Belgrade City Council and Power Construction Corporation of China (Dojčinović 2020), is for the construction of a hot water pipeline to connect the Obrenovac TPP and the New Belgrade heating plant. The Serbian oil and gas company NIS, in which Russia's Gazprom holds a controlling stake, contracted Shanghai Electric Group Company for turnkey construction of the Pančevo combined cycle power plant, with a generating capacity of 200MW. The project started in March 2019 and involves installing "two Ansaldo Energia gas turbines and one steam turbine" (Gazprom 2019). China National Electric (CNEEC) and its partner, the UK-based Scarborough Group International, were interested in building a combined-cycle natural gas-fuelled heat and power plant in Loznica, with a capacity of 240MW (Power Technology 2016). Given the absence of new information about this project, it is likely that one of the parties has now withdrawn.

### *The key obstacles for energy cooperation between China and the 17+1*

As expected, the analysis has shown that EU interfered mostly within building or revitalization of fossil fuels infrastructure e.g. coal-fired power plants in 17+1.

The EU objections were among the main obstacles why many proposed projects were either stalled or blocked due to its firm energy policy based on decarbonising member economies. While this policy and mutual agreements within EU members are part of their joined energy policy, the position of states with candidate status is somewhat complex due to their membership in Energy Community. Namely, for those countries there is an imbalance between their wishes to join the EU and their reality of slow accession process. This is what Rogelja and Tsimonis (2020, 130) explain by the Europe's peripheries where "the Europe's eroding influence *vis à vis* China is perhaps most visible". The reality of those countries is that their politics, economics, and law burdens are stopping them to access the EU. While they are committed to harmonize their own energy legislations and markets with the EU, the unknown future and not so bright present time, are forcing them to asset their situation in regard to their reality. Countries in the CEECs have large reserves of ore and existing infrastructure, so it is logical for them to invest in TPP modernization.<sup>9</sup> The economic benefits of TPP modernization in the short and medium periods are too good to be overlooked, and this is the main reason why they chose to invest in them. On the other hand, green energy is still an "unknown future" for them, which cannot provide enough electricity and is too expensive so far.

Beside strong EU objections, expense of projects (nuclear power plants especially), problems with local governments (countries internal issues e.g. Croatia), inner political problems (e.g. Romania) were the main reasons that effected the results of the projects being negotiated. Therefore, even though many negotiations lasted for several years, at the end nothing happened.

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<sup>9</sup> The Eurostat's analysis, *Enlargement countries – energy statistics*, states:

In 2018, nuclear and renewable energy sources [...] made up just over two thirds (67.3 %) of the energy production in the EU-27. By contrast, more than three quarters of Kosovo's\* (78.3 %) and Bosnia and Herzegovina's (78.1 %) energy production was from solid fuels and this was also the main source of primary energy production – accounting for more than half of all primary production – in North Macedonia and Serbia. In Montenegro, the share for solid fuels was just under half (49.9 %) while it was just over two fifths (41.5 %) in Turkey. Albania was an exception as solid fuels contributed 7.2 % of primary production while the contribution of petroleum products was 45.6 %, far higher than in any of the other candidate countries and potential candidates (Eurostat 2020).

Those data are clearly indicating the structure of energy production in the Western Balkans that is reflecting their need for TPP modernization.

### *The effects of energy cooperation between China and the 17+1*

A number of issues can be highlighted with regard to Chinese energy projects in CEECs before the 17+1 was established. Chinese state companies first became interested in the energy sector in 2005, but the number of projects they sought to participate in – and actually completed – is relatively modest. According to our findings, only two ventures were completed before 2014. One took place in 2009, when Sinomach invested \$100mn in a 35MW solar plant in the Czech Republic, and the other was the first stage of modernisation at Serbia's Kostolac TPP, worth \$293mn.

Having in mind these results, we can conclude that platform 17+1 has had a positive impact on Chinese projects in the energy sector after 2014, even though many recent projects have been unsuccessful. China has resources and will to invest, while the CEECs are willing to accept those projects of crucial importance for their economies. So far, 15 projects are completed successfully, worth more than €2.9bn (see Table 2), while some of the newly propositioned look very promising. Needless to say, this tempo of China's applying and completing energy projects in this region, especially in the Balkans, could make China one of the leading investors in the CEECs energy fields.

While the economic effects of investing in the energy field are known and trackable, the same cannot be said regarding the ecological ones. On the one hand, the construction and revitalization of many TPP in the Balkan region will certainly not improve national green footprints. In that sense, it is vital to implement correct ecological standards and improve in the best way work of TPP. The construction of HPP also brings concerns over this issue, so being aware of the consequences that can emerge from the non-applying ecological standards becomes crucial. Still, it is very encouraging that China is simultaneously pursuing many projects in the green-energy field. By doing that, China is assisting CEEC countries to more actively change their national energy policies in accordance with green energy goals.

### *China's geo economic strategy and its energy policy in the 17+1*

17+1 states do not supply China with significant amounts of energy resources. However, similar to Liedtke's notion on Chinese investments towards EU (2017, 664), China's energy policy contributes to its strategic economic and environmental goals in form of "increasing its share in foreign production and thus global supply, the construction of energy infrastructure and technology exchanges". This China's pragmatism could also be viewed through development

of its domestic energy policy. As a matter of fact, it could be said that the strategy of penetrating the CEECs energy market is very similar to the energy development strategy in China itself. Namely, at the beginning of its development, China invested mainly in traditional energy sources such as TPP and hydropower plants. With the increasing level of pollution within its territory, which is not only connected to energy production but also industry, China decided to invest in green energy (solar and wind energy) and nuclear plants.

One of the main parts of China's geo-economic strategy is to increase its economic presence in the 17+1, and with an energy policy that was presented here, China is slowly, but surely achieving that. The number of projects is constantly increasing while there is still enough space to negotiate new projects and initiatives.

### *Chinese energy projects in Greece*

Greece joined the 16+1 in 2019, so Chinese energy ventures in this country should also be assessed. In 2016, the State Grid Corporation of China bought a 24-percent stake in ADMIE, Greece's state-owned power transmission system operator, for €320mn (Xinhua 2017). This firm is currently pursuing two projects with Chinese funding, the Cyclades Interconnection and the Crete-Peloponnese Interconnection, both of which aim at securing more reliable and stable power supply for the Greek islands. Another facility is being constructed on Crete with the involvement of two Chinese firms, Energy China CGGC International Ltd. and Supcon Solar of China, which have been contracted to design and build Minos CSP Park, a 50MW concentrated solar power plant.<sup>10</sup> In addition, China Energy Investment Corporation has signed a cooperation agreement with Greece's Copelouzos Group for projects that use both renewables and conventional energy. According to Copelouzos, the Chinese company has agreed to invest €3bn in a variety of ventures in Greece (*TornosNews* 2017). Official statements claim that CEIC will acquire 75 percent of the pipeline of wind farms operated by the Greek firm (Jovanović 2018b). Hence, including Greece in the equation seems to lend added weight to the belief that China will increase energy investments in the 17+1 countries, especially when it comes to renewables.

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<sup>10</sup> The UK's Nur Energie Ltd. and the Greek firm Motor Oil Hellas have overall responsibility for the project.

## Conclusion

This paper analyses the nature of China's economic involvement in the energy sectors of the 17+1, and the main purpose of the research was to assess the overall nature and results of Chinese energy policy towards the 17+1, whilst at the same time producing a transparent database that provides a snapshot of the state of play in energy cooperation between China and the 17+1.

Bosnia and Herzegovina, Poland, Serbia and Hungary were the countries in which China showed the greatest interest to invest in the energy sector, judging by the number of projects listed in the appendix. According to available and presented data, the successful rate of Chinese projects is less than 50% (15 successful projects out of the 36 listed). Although some trends indicate that China prefers coal-fired power plants when it comes to building new energy infrastructure, the realisation rate and results of these projects are below expected, due to strong EU objections and individual countries' internal issues. In addition, China is increasingly showing interest in green energy in the 17+1 countries, and this aspect of its energy policy has to date yielded the most success relative to the investments made and is mostly aligned with European energy principles. The nuclear energy sector is where Chinese firms have experienced some of their greatest failures, while the hydro energy subsector still has potential. In total, Chinese investments in energy field had a positive impact on the development of energy sector in 17+1, and the greatest potential lies in green energy development because it is aligned with Chinese energy policy, the EU's energy policy, as well as with internal strategic orientation of CEECs towards green development. Nevertheless, though China and the CEECs have achieved some outcomes, there still remains room for improvement.

Finally, although Greece was excluded from the initial analysis given its late entrance to the 17+1, an examination of China's bilateral relationship with Greece in the energy sector indicates Chinese investment in the 17+1 countries is only set to increase, especially in the field of renewable energy.

China's shift in geopolitical and geo-economic policy has increased Chinese investment in the energy sectors of the 17+1 countries, as proved by comparing results of energy cooperation before and after the cooperation framework was established. Assessing the state of play of Chinese energy cooperation with the 17+1 has proven to be significant for identification of the key aspects of China's energy policy towards countries of the BRI and its overall energy policy that underpins the country's international energy cooperation. Chinese companies have invested much time, energy, and resources in seeking investments in the

energy sectors of the 17+1 and have revealed themselves to be highly competitive. China has emerged as a pragmatic actor and its involvement in the energy sectors of the 17+1 countries ought to be understood as a part of a broader, rational strategy that aims at achieving Chinese economic and environmental goals. This pragmatism has, nevertheless, raised many doubts with other stakeholders on the international stage, and this is the key reason why it should be looked upon more carefully and rationally.

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### ENERGETSKA SARADNJA KINE U OKVIRU „17+1”

**Apstrakt:** Autorke u radu analiziraju energetska saradnju između Kine i zemalja koje okuplja okvir „17+1”. Kako bi se bolje razumeo širi politički kontekst ove saradnje, posebna pažnja je posvećena kineskim energetske interesima i energetske politici Evropske unije. S obzirom na to da postojeće baze podataka o kineskim energetske projektima u „17+1” nisu pouzdane niti potpune, autorke su kreirale novu, namensku bazu podataka. Autorke nastoje da odgovore na neka ključna pitanja o glavnim projektima unutar saradnje između Kine i „17+1”, poput: u koje zemlje i koje energetske sektore je Kina najviše investirala; koje su glavne prepreke u postojećoj energetske saradnji; da li je ovakav vid energetske kooperacije imao pozitivan uticaj na razvoj članica „17+1”, kao i da li je Kina, na primeru „17+1”, uspešna u ostvarivanju svoje geoekonomske strategije i celokupne energetske politike. Autorke zaključuju da je Kina u okviru „17+1” posebno zainteresovana za izgradnju termoelektrana, ali i da su do sada realizovani rezultati ispod očekivanja, s obzirom da je na takav učinak uticala kombinacija faktora poput protivljenja Evropske unije, troškova projekata i unutarpolitičkih pitanja u zemljama „17+1”. Podsektor nuklearne energije jeste onaj u kome su kineske kompanije doživele neke od svojih najvećih poraza, dok podsektor hidroenergetike još uvek ima potencijala za budući razvoj. Pored toga, primetan je i trend pojačanog ulaganja Kine u zelenu energiju u zemljama „17+1”. Na osnovu dobijenih rezultata, može se zaključiti da Kina polako, ali sigurno postiže ciljeve proklamovane energetske politike kao dela svoje šire geoekonomske strategije. Ukupno posmatrano, efekti saradnje u energetske sektoru jesu obećavajući, ali još uvek ima prostora za njeno dalje unapređenje.

**Ključne reči:** Kina, „17+1”, energetska politika, energetska saradnja, energetske projekti.

**APPENDIX:  
Chinese energy projects in the 17+1 countries**

Country	Project	Chinese partner/investor	Type of project: loan, greenfield, joint venture etc.	Energy subsector	Status	Value
Albania	Controlling rights in two Albanian oilfields owned at the time by Canada-based Banker's Petroleum	Geo-Jade Petroleum Company	Acquisition of Banker's Petroleum	Oil	Finalised	\$442.3 million
	Tuzla thermal power plant, Unit 7	China Gezhouba Group Company Limited Peking and Guandong Electric Power Design Institute	Loan	Coal	Active	€722mn
Bosnia and Herzegovina	Banovići thermal power plant	Dong Fang Electric Corporation (DEC)	Loan	Coal	On hold	€405mn
	Gacko 2 thermal power plant	China Poly Group	Joint venture	Coal	On hold	€500mn
	Wind farm in Tomislavgrad, 112MW	China Machinery Engineering Corporation (CMEC) and China-Africa Investment and Development Corporation	Greenfield	Alternative energy	On hold	\$162mn

Country	Project	Chinese partner/investor	Type of project: loan, greenfield, joint venture etc.	Energy subsector	Status	Value
Bosnia and Herzegovina	Two wind farms (50MW) in the Central Bosnia Canton	China Machinery Engineering Corporation (CMEC), Tomix Kneževa, TLG Travnik	Joint venture	Alternative energy	Negotiations ongoing	€140mn
	Dabar hydropower plant	N/A	N/A	Hydro	Active	€265mn
	Hydropower plants on river Drina (Buk Bijela, Foča and Paunci)	China National Aero-technology International Engineering Corporation (AVIC-ENG)	Financing and construction	Hydro	Negotiations ongoing	N/A
	Four small-scale hydropower plants (three on Bistrica River and one on Janjina River)	China National Aero-technology International Engineering Corporation (AVIC-ENG)	N/A	Hydro	Negotiations ongoing	N/A
Bulgaria	Belene nuclear project	China National Nuclear Corporation (CNNC)	Strategic investor	Nuclear	Ongoing negotiations	\$11bn
	Biomass power generation facility in Bulgaria	Shandong Yangguang Engineering Design Institute Co. Ltd.	Project design	Alternative energy	On hold	N/A

Czech Republic	Energy 21, solar power company, 61MW	China – CEE Fund	Acquisition	Alternative energy	Finalised	N/A
Croatia	Wind farm in Senj, 156MW	China North Industries Cooperation (Norinco)	N/A	Alternative energy	On hold	\$200mn
	Energija Projekt power company	Norinco	Acquisition of 76% of company	Alternative energy	On hold	\$36mn
Hungary	40-megawatt geothermal power station in the Pest County town of Tura developed by KS ORKA	Zhejiang Kaishan Compressor Co.	Construction and project development	Alternative energy	Completed	€141mn
	Kaposvar solar power plant, 100MW	China National Machinery Import & Export Corporation (CMC), a subsidiary of China General Technology Holding Co., Ltd (Genertec)	Greenfield project	Alternative energy	Active	€100mn
	Two solar projects with capacity of 13.9 MW and 2.15 MW, respectively	ReneSola	N/A	Alternative energy	Finalised	N/A

Country	Project	Chinese partner/investor	Type of project: loan, greenfield, joint venture etc.	Energy subsector	Status	Value
Montenegro	Pijevlja thermal power plant	China Engineering Corporation Machinery (CMEC) was one of two companies that unsuccessfully bid in recent tender	Loan	Coal	Unsuccessful	N/A
	Enemalta plc., wind turbine on Mt Možura	Shanghai Power Electronics	Construction of wind turbine	Alternative energy	Completed	€87mn
Poland	Hydropower plant on Morača River	Norinco	Construction and concession	Hydro	Negotiations ongoing	€500mn
	Polenergia	China-CEE Fund	Acquisition of 16% of Polenergia	Alternative energy	Finalised	\$60mn
	36 MW Wroblew and 214 MW Project 2 wind farms	China-CEE Fund and Enlight Renewable Energy	Joint venture	Alternative energy	Finalised	\$350mn to \$406mn
	Zopowy wind farm, 30MW	China-CEE Fund and GEO Renewables	Joint venture	Alternative energy	Finalised	N/A
	Poland's first nuclear power plant	China General Nuclear Power Group	N/A	Nuclear	Unsuccessful	N/A

Poland	Solar auction bids to 26 utility projects of 1MW total	ReneSola	N/A	Alternative energy	Finalised	N/A
Romania	Rompetrol Rafinare	China Energy Company Limited	Acquisition of 51%	Oil	Unsuccessful	N/A
	Rovinari thermal power plant	China Huadian Engineering	Joint venture	Coal	Negotiations ongoing	€847mn to €1bn
	Cernavodă nuclear power plant	China General Nuclear Power and Nuclearelectrica	Joint venture	Nuclear	Negotiations ongoing (uncertain)	\$7bn for expansion
	Mintia-Deva thermal power plant	China National Electric Engineering Construction Corporation	Modernisation	Coal	Unsuccessful	\$271mn
Serbia	Kostolac thermal power plant	CMEC	Loan	Coal	Active	\$715mn
	Pančevo combined cycle power plant, 200MW	Shanghai Electric Group	N/A	Gas and water	Active	\$210mn
	Loznica combined cycle natural gas-fuelled heat and power plant, 240MW	Consortium of Scarborough Group International and China National Electric (CNEEC)	Loan	Heat and gas	Unsuccessful	€230mn

Country	Project	Chinese partner/investor	Type of project: loan, greenfield, joint venture etc.	Energy subsector	Status	Value
Serbia	Štavalj thermal power plant	Power China SEDC	Various options possible	Coal	Negotiations ongoing	€600mn to €700mn
	Construction of hot water pipeline linking Obrenovac thermal power plant and Novi Beograd heating plant	Power Construction Corporation of China	Loan	Hydro and coal	Active	€193mn
Slovakia	Slovenske Elektrarne	China National Nuclear Corporation (CNNC)	N/A	Nuclear	Unsuccessful	N/A
	Hydroelectric plant on Ipel River	CNNC	N/A	Hydro	Unsuccessful	N/A

Source: Authors' compilation of the data reviewed. Sources used for this table are included in the list of Database references.