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China's SDG cooperation and environmental strategies towards Central-Eastern Europe countries

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Abstract: The year of 2024 marked the twelfth anniversary of the cooperative mechanism between China and Central and Eastern European countries (China-CEEC). China has repeatedly affirmed its willingness to implement the 2030 Agenda for sustainable development and the sustainable development goals (SDGs), which created many opportunities to enhance the cooperation of the two sides. The paper exemplified some cases in the process of the cooperation, which were rarely discussed previously as normally it was dominated by the large-scale investment project. The cases of the climate change and ocean issues were perceived as a package of holistic EU-China relations that demonstrates the commitments from both sides to deal with SDG 13 and SDG 14. A qualitative method of the policy-circle evaluation and the goal-setting in the global governance was applied in the paper. The findings affirm that the current China-CEEC cooperation scheme is still carrying on both opportunities and challenges and affected by various internal and external factors.

Keywords: China-CEEC; policy-circle; goal-setting; assessment; international cooperation; SDGs

1. Introduction

The conceptualization of sustainable development (SD) and its brief and clear evolution since the 1980s has been explicitly stated in some extant literatures as UN 1982, WCED 1987, UN 1992, UN 1995, and UN 2012 (Hák et al., 2016). The sustainable development goals (SDGs) are monumental continuousness for the global multilateral initiative which replaced the term of millennium development goals (MDGs) coined in 2000 (Lewis et al., 2021). In September 2015, the United Nations Sustainable Development Summit officially adopted the “Transforming Our World: The 2030 Agenda for Sustainable Development” (the “2030 Agenda”), in which the joint agreement was made by 193 member states with a proposal of seventeen sustainable development goals and 169 specific targets that can be reviewed, monitored and measured (Gupta, 2016). Many factors including limitation to the current usage of resources and low-efficiency of the social development as well as the deterioration of the human-nature relations leads to a profound pondering on how to solve the problems. “The limits to growth” proposed a “development dilemma” where the continuous economic growth encountered with higher demand of environment and natural resources protection, which has never been a sole-nation issue, but requires more in-depth international cooperation even until today, and the paradigms will get a comparative balance when the stable and sustainable economic growth takes place among environment-friendly sectors (Meadows, 1972). To balance the paradigms, many scholars believe the sustainable development concept of sustainable development or sometimes “sustainability” was pointing to three crucial aspects: areas

development: economic growth, social inclusion as well as environmental protection, which weights significantly in SDGs conceptualization (Androniceanu, 2019; Bayar et al., 2020; Borocki et al., 2019).

At present, the endeavors to fulfill the 2030 SDGs is challengeable, particularly with the severe health, social and economic crises in a post-COVID-19 era, which demonstrated by a worsening global recession since the Great Depression, Russia-Ukraine war also creates regional and global tension, not only on the national and international security issues, but also make severe energy crisis in some European countries (IMF, 2022). In such a context, the achievement of SDGs is intended to be more challengeable on both regional and global level, the concrete implementation depends on whether countries prioritize them rather than the national security. The SDGs is closely association with the concept of “green development” in economics and political scopes. In the economic perspective, SDGs emphasize a health growth in a certain society and maintain a balance between natural resources and human behavior, which is widely accepted by the international community as the “harmonious development model” (David et al., 1989). When the SDGs is on the plate of international affairs, we have witnessed a variety of public speaking, debates and treaty-signed as a result of power-gaming, diplomatic events and cooperative mechanisms, which often conveys uncertainty in the process of policy-making and lies in several problematic developmental regions such as Western Balkan, Sub-Sahara Africa, where integrated and operational policy is demanded for a balance of various SDGs and the independence of the socioeconomic development, and the untransparent governance system often established obstacles in fulfilling SDGs (Collste et al., 2018; de Ven et al., 2019; Duan et al., 2018; Mainali, 2018). More importantly, nations naturally require the closer cooperation in a multilateral platform and well-designed framework to convene the joint effort on the fulfillment of these goals. To achieve the SDGs is a long-term task, which especially needs the major-power’s sincere commitment with a variety of policies and actions to fulfill the SDGs goals (Liu et al., 2021). In addition, the achievement of these global goals cannot be realized by single nation but multiple countries.

From the perspective of the SDGs, the central question revolves around whether the intensified cooperation between China and the CEECs can truly drive progress on key sustainability targets, such as climate action (SDG 13), and so on. Although the cooperation has led to increased investments in infrastructure, energy, and trade, there were concerns regarding the environmental impact of such projects, particularly in terms of carbon emissions, resource extraction, and the potential exacerbation of socio-economic inequalities. After 2020, China and CEEC rekindled the cooperation enthusiasm, more research focused on the political, economic, and social impacts of the cooperation framework and the deepening China-EU relations via the Belt and Road Initiative has begun to gain momentum. However, there remains a substantial gap in understanding the long-term sustainability of these collaborations, particularly in relation to their alignment with the United Nations sustainable development goals (SDGs). Thus, to what extent the two-side cooperation and its interconnected dynamics with broader China-EU relations provide a meaningful avenue for advancing sustainable development? The paper associated with methods of policy linkage analytical framework and also the goal-setting in the global governance with

two specific case studies. It was also attempted to contribute a qualitative and SDGs related policy characteristic based on the extant literatures on CEEC quantitative studies by paying attention to set up a concise measurement framework to point out the cooperative vision in future development.

2. Literature review

China and CEE countries have a similar synchrony regarding the developmental path towards the paradigm of natural resource and economic growth. In the 1990s, Central and Eastern European countries embarked on the complex process of transitioning from centrally planned economies to market-driven systems. Concurrently, global efforts to address climate change gained momentum with the formal adoption and subsequent enforcement of the United Nations framework convention on climate change (UNFCCC). While the economic transformation of these nations is now largely complete, with their economies fully integrated into the global market system, the global endeavor to combat climate change remains an ongoing challenge. For Central and Eastern Europe, the shift towards a green economy presents one of the most significant and pressing challenges to be addressed by 2030. Despite progress, the region's journey towards sustainable development and environmental resilience is far from over. In the early 2010s, CEEC returned to the agenda of China's foreign policy after a long disengagement. The first meeting of Chinese and CEEC heads of government was held in Warsaw in 2012, forming a new arrangement for cooperation (Danijela et al., 2023). Since then, the "green development" was a mutual goal that the two sides were driven to achieve. The cooperation between China and CEEC on SDGs also considerably impacted on the China-EU relations and the interaction of CEEC and the European Union (EU) (NDRONEA, 2022). Trade between China and CEEC when accounted into the entire value of China's bilateral trade or global clout, is still a very moderate portion. However, since 2012, a visible rising of vibrant economic cooperation within the framework of the China-CEEC cooperation mechanism has been recorded, triggered bifocal debates, primarily focusing on China as a source of business chances and foreign direct investment (Pan, 2012). In addition, the economic and trade behavior from China has to abide by relevant EU regulations and laws as well as governmental cultures and environmental standards. The binding engagements have enabled CEEC to act as a leading role in cooperation with China and effectively prevent uncertain risks (Song, 2023). CEEC is an excellent study region for the SDGs as the central authorities made commitment to increase the clean energy supply with an aim of more than eighty percent of the electricity providing from renewable and sustainable resources, which provides the CATL investment in Hungary in the following section. The recent Russia-Ukraine war rose threat on energy imports to Europe from Russia and will potentially increase the rate of transition away from fossil fuels (Abraham and Cheng, 2022). Pakulska (2021) identifies the energy structure of CEEC and classifies these countries by an index metric and reached a conclusion that there wasn't a one-size-fits-all method for the deployment of clean energy.

China plays a vital role for the achievement of SDGs at a global level. The large population and quick development cast increasing pressure on the environmental

protection and sustainable resources (Niva et al., 2021). China's National Plan on Implementation of the 2030 Agenda for sustainable development, as outlined in its Voluntary National Reviews of the 2030 Agenda, underscores the nation's strong commitment to sustainable development, recognizing its critical importance for economic, social, and environmental progress (Ministry of Foreign Affairs China, 2016). The plan highlights a focus on nine key areas, with an emphasis on the need to "implement innovation-driven development strategies and generate momentum for sustainable, healthy, and stable economic growth" (Ministry of Foreign Affairs China, 2016). Concurrently, the European Union is striving to position itself as a global leader in the implementation of the SDGs, with several member states actively pursuing leadership roles in advancing sustainable development (European Commission, 2018). Beijing's most recent environment policies reflected that the government firmly adopted the "ecological modernization" framework that focusing on the convergence and divergence between Chinese and European modes of ecological modernization when taking account of nation governance, domestic market, local non-governmental organizations and international integration (Moldan, 2006).

In 2016, China released the NPIASD national strategic plan, namely National Plan on Implementation of the 2030 Agenda for Sustainable Development in the United Nations, in which Beijing revealed its guiding principle and concrete measurements to fulfill the goals (Xie et al., 2021). Among these goals, China is noting that the largest challenging of hard-to-achieve sub-goals are SDG 11, 13, 14 and SDG 15 (Pepijin et al., 2022). As most of them are global issues, China implements policy towards the international cooperation and spontaneously seeks for more China-led initiatives under the Belt and Road Initiative (BRI). In this regard, China is an undeniable and vital player to promote the cooperation for the SDGs with other countries. In the past decade, China has been committed to its environmental protection courses, increased green energy development and waste recycling. From the importance of ecological development goals in the 13th and 14th Five-Year Plans, it is safe to see how much China attaches great importance to environmental protection. Chinese President Xi Jinping pledged in his speech at the general debate of the 75th UN General Assembly in September 2020, on that occasion he firmly mentioned that China would strive to achieve "carbon neutrality" by 2060. China has also increased overseas investment in renewable energy. It can be seen that China has invested a great number of resources and energy in the development of green energy and environmental protection. On the other hand, manufacturing is still the main sector of China's energy consumption and carbon emissions, and reducing carbon emissions is still one of the greatest tasks that China will encounter in the next few years.

The China-CEEC cooperation was officially launched in 2012, and the year of 2022 remarks its 10th anniversary. The CEEC are located in strategic region in China's BRI. The ecological and environmental protection cooperation has received widespread attention from both sides under the framework of China-EU cooperation on climate cooperation, environmental standards, coal power projects and green investment, etc.

However, to some extent, besides the effective and flexible international cooperation model on the SDGs implementation, the mechanism also received some concerns of "China threat" from EU, particularly the Russia's invasion of Ukraine

confirmed CEEC's views of Russia, which is also affecting their relations with China (Zhang, 2021).

At present, the cooperation of China-CEEC has been setback due to the “pulling out” of three Baltic countries, Lithuania, Latvia and Estonia from the mechanism, Lithuania is a major trade partner with China in CEEC for the aquatic food in SDG 14. The remaining the fourteen European states are divided by EU and non-EU countries, the former is represented by Poland, Hungary, Czech, Slovakia (the so-called Visegrad group), Romania, Bulgaria, Croatia, Greece, and Slovenia; the latter includes Serbia, North Macedonia, Montenegro, Albania, Bosnia and Herzegovina, namely the Western Balkan countries. After more than three decades of social transition and transformation of these CEE countries, the EU-based regulation and laws on economic growth and the conservation of natural resources has been widely accepted by both EU and non-EU members. China has to obey the norm-setting game when it comes to the cooperation on various topics. However, multiple factors such as the downsize of the EU economy, the global pandemic and the Russia-Ukraine war drive the CEEC behave with a pragmatic doctrine and attempt to attract more foreign investment from non-European actors. Countries like Poland positively believes that the market for environmental technology and related goods and services industries is the most competitive growth point in global economic context. Take infrastructural construction for instance, CEEC countries were eager to update the transport infrastructure that lagging far behind compared to western Europe. Visegrad Group (V4) made their commitment to further optimize the transport network and improve connectivity with other EU countries.

Among all SDGs, SDG 13 addressed climate change and SDG 14 referred to marine protection and below water life that about 80% of CEE countries are encountering challenging on fulfilling both goals (Wysokińska, 2018). The advancement of infrastructure construction is conducive to climate change. Investment in infrastructure construction to deal with climate change cannot only provide a foundation for the economic development of these countries as well as adding strength to solve their immediate needs, but also help protect the ecological environment. The more facilitate of the transportation connectivity, the more environment-friendly economic growth, the freight trains operating between China and multiple European destination demonstrate the shorten of the consuming time and the less-polluted emission by the sea ship (Xie, 2023; Zhou, 2020).

In September 2020, China announced the goal of carbon peaking and carbon neutrality respectively by 2030 and 2060 for the medium-long term. In July 2021, the “European Climate Law” came into force with a declaration that by 2030 the emission reduction by 55% compared with 1990 and by 2050 fulfill the carbon neutrality (Wang and Wang, 2022). Prior to COP26, China and the EU respectively submitted their national contribution plans. In February 2021, China's President Xi addressed in the opening speech at the China-CEEC Leaders' Summit and emphasized that China-CEEC cooperation should focus more on inter-connectivity in order to architect high-quality “Belt and Road Initiative” (Heras, 2021). On the menu of cooperation, green development and climate change (SDG 13) are prioritized. At the summit, the participating parties jointly formulated the “2021 China-CEEC Cooperation Beijing Activity Plan” with an identification that 2021 as the Year of Green Development and

Environmental Protection in the China-CEEC cooperation. The sustainable developments from China and CEEC not only meet the inherent requirements of China's ecological civilization course, but also the practical needs of CEEC for green and low-carbon development, and is conducive to promoting regional sustainable development and constructing a green community with a shared future for mankind. The summit also released a list of 88 achievements, transportation infrastructure, renewable energy, other ecological and environmental-related projects have been included in the list, in order to give full effort to the support and guarantee services of ecological and environmental protection. The summit has laid a foundation for promoting the high-quality co-construction of the green "Belt and Road Initiative" in CEEC.

3. Research method

The article primarily investigated the changes and the features of China-CEEC cooperation mechanism on certain SDGs that includes implementable aspects of project-cooperation, regional development goals and leadership challenges and strategies, and it derived from immense influence in creating and developing a managerial sustainability, and how these components form an integrating and cooperation policy circulation in a trans-national setting. Larissa (2020) examined relevant panel data from 10 CEE and Baltic countries and indicated that central governing bodies are on a call to implement policy changes in order to achieve economic growth by various sustainable measurements as well as making efficient transition from brown(low-efficiency) economy to a green economy. Kavalski's (2021) long-term attention to the post-Soviet CEE and China-CEEC relations made up a prism of profound observations on the cooperative levels.

Based on the existing literatures, this research presents an application of the analytical framework of policy circle that proposed in Tomás Hák and a model of the "goal-setting" in the global governance proposed by Bogers and Biermann (2022). This approach focuses on analyzing how specific goals are formulated, implemented, and evaluated within international partnerships, emphasizing the role of clear and measurable objectives in driving sustainable outcomes. The research design involves a qualitative analysis of policy documents, official agreements, and public statements related to the bilateral cooperation framework. The goal-setting methodology is applied to assess how both China and CEECs define and align their sustainability targets within the context of the collaborations. In applying this methodology to China-CEEC SDG cooperation, it observed how explicitly defined objectives underpin the strategic alignment between China's Belt and Road Initiative (BRI) and the sustainability agendas of CEEC nations. As the **Table 1** demonstrates that the goal-setting approach facilitates a structured analysis of how these shared goals are articulated, operationalized, and monitored, providing a framework to evaluate the coherence and synergy between policy declarations and actual implementation actions. Thus, content analysis is employed to systematically scrutinize the text of relevant documents, identifying key themes and patterns related to goal-setting, implementation strategies, and the measurement of progress towards the SDGs. The study also incorporates case study analysis of specific joint initiatives to explore how

goal-setting translates into concrete actions and outcomes. By triangulating these qualitative data sources, the research aims to provide a comprehensive understanding of the effectiveness and challenges in achieving the SDGs within the context of China-CEEC cooperation. The policy circle provides a policy upgrade and adjustment for both China and CEEC regarding their own decisions on “participation or not”, Greece’s accession to the mechanism in 2019 and three Baltic countries withdraw from it in 2022 interlinked the domestic policy and the international cooperation on sustainable development issues. In addition, the SDGs cooperation in China-CEEC mechanism also reflected the challenges and opportunities in global governance of “goal-setting”, particularly this bilateral cooperation is in a normative narration of Beijing’s leadership and initiatives in CEEC and the EU’s established rules and regulations. Thus, the combination of the two analytical tools implied three policy-coherence changes in China-CEEC. To begin with, the current Russia-Ukraine war, to some extent, made the CEEC’s top priority from developmental issue to the concerns addressed by national security and energy security considering Russian’s energy-role in the CEE region, and a closer China-Russia friendship cast more questionable and “strategic hesitation” on cooperation with China. In line with it, the withdraw of the three Baltic countries from the mechanism kindled another wave of debate in EU on China’s strategic intentions in the region (Gries and Turcsanyi, 2022). Moreover, the COVID-19 pandemic and the recovery period turned out to be another hindrance in achieving these goals, due to all its consequences at the political, economic, socio-cultural levels and the impact of the pandemic on society is unclear, long-lasting, and difficult to measure (Clementa-Suarez, 2022). China employed the slogan strategy of “win-win” to increase its economic and political influence in CEEC, which generally referred to a mixture of positive economic statecraft and the cultivation of soft power (Pepermans, 2018).

Mathematical models in some researches were applied to assess and evaluate the business environment of CEE countries and the level of the bilateral sides based on selected data, in a broader concept of bilateral cooperation (Chen and Yang, 2017). When it comes to address the quantifying research for assessment and measuring tools for the overall score of the implementation of SDGs in CEEC. Raszkowski and Bartniczak (2022) conducted provoking research to identify the challenges and opportunities by using synthetic measure of development (SMD). In the research, several key indicators were selected to quantify the specification of the CEEC’s SDGs, we certainly admitted that these indicators explained how the sustainability of social, environmental, and economic development in each individual country and following with the address to the future challenges and opportunities in CEE region, but interestingly, in their very first-hand analysis and wrap-up of SDGs in CEEC, China-related international cooperation mechanism wasn’t mentioned and considered as a possible solution to the challenges and opportunities that the CEEC encountered. It summarized that the CEEC was still “more comfortable” within the EU framework other than the non-EU actors. Thus, this academic blank provides an opportunity to conduct a qualified policy assessment in the concept of international cooperation from a non-European actor and a major power into an-already-existing norm-setting region by European Union. The indicator was also adopted and applied by the UN Commission on Sustainable Development and subsequently be used by multiple

international organizations and governments, the measurement and assessment framework varied on national, regional and international (FFEC, 2022). Having saying so, this article is specifically dedicated to contribute from a “normative” narration to the current literatures addressing the cooperation between China and CEEC by adding two prominent cases in the following part to advance the theoretical framework.

Table 1. Goal-setting policy assessment linked to China-CEEC mechanism.

Policy Step	Opportunity	Challenge	Remark
Formulation	New development model initiated with BRI, pragmatic, voluntary, non-binding	EU’s norm, value-based bias, different understanding of SDGs	Non-legal binding nature
Legitimation	High-level political forum, domestic law promulgation, sub-mechanism and professional-level industry (climate change, aquatic and water)	Relevant law, civil society and NGO resists in environmental and climate change, science-based ocean studies	Science- and evidence-based knowledge matters in legitimation including local job increase and other benefits
Implementation	Public-private and private-private stakeholders, local cooperation (Zhejiang-CEEC), inter-infrastructure connectivity (China-Europe train), global commitment to national and regional circumstances and priorities, policy integration	Goal misunderstanding (debt trap), local project failure and community conflict, dysfunction of project and contract	Transparent-, project-based, (CALT investment in Hungary, Slovenia’s Triglav glacier for Winter Olympics)
Evaluation	Indicators development (GDP increase, cleaner air and water, higher public knowledge on SDGs), education and academic partnership, new technology, social media and citizenship	Withdraw from the mechanism (Baltic countries), external factors (China-US relations, Russia-Ukraine war, Nord Stream explosion)	Political interpretation of indicators results towards stakeholders (satisfied or not, priority change)
Change	Review of the mechanism, new goal- and norm-setting, further academic support for the integration of the economic, social, and environmental dimensions	Political ideas and visions differ, non-adaptability of the related governance arrangements (local protest), government change	New goal-setting, flexible institutional arrangement, social-ecological factor

Source: author’s contribution based on literatures.

4. Results

4.1. China furtherly integrated China-CEEC into China-EU relations by “goal-setting”

China perceived the cooperative mechanism with CEEC as part of its relation with EU. Due to the different nature of political system, various views concerned that this initiative may offend the EU norms and some EU members were alert for China’s presence in the region (Gries and Turcsanyi, 2022). The EU and China reached an agreement in 2020 to conclude the EU-China Comprehensive Agreement on Investment (CAI), which facilitated the current bilateral trade agreements and brought more legal certainty in lawful and resulted a healthier economic environment within the EU, freer and more equal access of European investors to the Chinese market. The CAI provided adequate legal guarantees on national treatment and abolished quantitative and capital constraints (CDIS, 2022). The overall progress, especially the status quo and challenges of implementing ecological environment-related indicators, also combined with the opportunities and challenges in the bilateral mechanism eco-environmental cooperation in a goal-setting context. The European Union, where CEECs are framed-in or abided by the relevant laws and regulations on sustainability, has a relatively complete and well-and-sound legal system as well as enriching experience in environmental governance and protection. CEEC abide by EU environmental regulations and standards to a large extent in terms of ecological

protection, whose standards are non-consistent with the counterpart in China with a potential difficulty of direct connectivity. Some observations commented that due to the complex political factors of CEEC and the inconsistency of environmental standards between China and the European Union, China's investment in energy and infrastructure projects in the CEEC have a long negotiation process, which is not conducive to the implementation of the project and the trade deficit between China and CEEC has also implied an asymmetric trade and economic cooperation that may lead to further downside of the mechanism (Lahiani, 2020; Xue and Weng, 2017). Regarding the fulfillment of goals in CEEC, the previous research demonstrated that the factor of economic growth in the Central and Eastern European countries, functioned significantly with other factors such as corruption, political instability, resulted to the natural resources depletion without adequately compensating for the consumption (Zugravu et al., 2022). The closer relations with the developed economies in EU was also beneficial for CEEC to absorb in technological spillover effects, so they have a comparative advantage in green production. Therefore, CEEC took their own comparative advantages and made full use to the characteristics of labor division and global product trade that enhanced the overall emission reduction effect of the CEEC. In addition, the role of EU membership and EU candidate nations of the CEEC countries formed a "strategic dilemma" when taking sides with EU or China, and sometimes the US influence, the "pulling out" of the Baltic countries manifested such a mentality towards the China-CEEC cooperation and profoundly reflected its non-legally binding, weak institutional arrangement and country-specification features. Two case studies demonstrate how non-legally binding and flexible of the mechanism regarding individual project and country.

4.2. Case studies on SDG 13 and SDG 14 in China-CEEC cooperation

Incorporating sustainability development into the "China-CEEC" policy framework and investment and trade will create window opportunities for clean and sustainable development between China and CEEC. The past few years since late 2019 witness the global finance affected by some new trends and turbulence caused by COVID and it might impede commitments from various central governments regarding the carbon-related economic transition process (World Bank, 2022). Within the strategic framework of Belt and Road Initiative, capitals from China continues to be one of the primary financial and investment sources to speed up transition to a digital-innovation driven and sustainable model (Levente, 2022). Regarding the construction of large-scale infrastructure, it is necessary to implement the green development and prevent the ecological and environmental risks of the project, avoid negative impacts on the environment as much as possible, assist CEEC achieve a balanced, greenery and sustainable development. As a result of the long-term sustainable development, the vision is to upgrade the cross-regional cooperation of China and CEEC into an important and vivid practice and example in the formation of green BRI.

The nations are encountering multiple challenges of common ecological environment and climate change, while receiving vigorous development with larger capital flow, they are also undergoing the largest green and low-carbon transformation

in history. Most CEE countries are developing countries with small and medium sizes, the green transformation and development requires huge investment. Therefore, the increase the proportion of renewable energy in the industry structure are urgently needed, otherwise the economic development model would be considered as a “negative asset” in the worldwide campaign to reduce carbon emissions. China attempted to improve or preserve existing markets by the application of new development model motivated by technological innovation and competitiveness in new renewable energy industries. The Section IV of the CAI between China and EU is dedicated to investment and sustainable development. CALT’s foreign investment in Debrecen to build a 100 GWh battery plant was so far the largest FDI in Hungarian history, the investment reaffirmed the commitment to achieve the various SDGs. Since the establishment of the China-CEEC cooperation mechanism, Hungary, for more than a decade, was one of the most accommodative countries in CEEC to welcome China’s investment. Budapest actively cooperated and vigorously upgrade of the local transportation with a further strategic ambition to be the hub of air cargo distribution. Various advancements in railway and air transportation resources manifested such ambition and it indeed played a vital role in the new era of East-West trade cooperation (Balázs, 2022). The bilateral relation between Hungary and China has achieved many milestones. China was Hungary’s largest trade and investment partner counting for the non-EU country. Due to the closer cooperation between China and Hungary in the past decade, Hungary has become an investment wonderland for Chinese enterprises and an important gateway to expand business in other EU markets (Palkovics, 2022). The investment furtherly corroborated that Hungary welcome initiatives from China, not only BRI, but also International Cooperation in Industrial Capacity and Equipment as well as “Made in China 2025”, which will be reliable cell and module supplier to European automakers and make significant contribution to the reduction of CO² emission and other SDGs, in which the success of the case also demonstrated Hungarian’s “Eastern Opening” policy (Lukács and Völgyi, 2021). CATL invested in Debrecen and established the plant would significantly impact on the battery demands of the European market, improve its global network as well as assisting the acceleration of renewable energy usage in Hungary and CEEC region. With the firm commitment to reduce the carbon footprint in battery manufacture industry, CATL also aimed to develop solar power with local collaborators in CEEC to improve the sustainable and circular battery chain. The favorable economic growth and “go global” strategy with the expanding re-network with the post-communist CEE countries have made China’s investment perceptible and visible in Hungary and the region.

In line with the CATL’s SDG 13-related green investment in Hungary, the shipment of the sample of the Triglav glacier from Slovenia to Beijing for the Winter Olympic is an awareness-raising of ocean-based climate change campaign and highlighted the perilousness of glaciers worldwide as well as the purpose of public education, which to some certain group or on certain occasions, are straightforward and central for the capacity building and institutional development for the adoption of sustainable and renewable technology, in a “up to bottom” mode (Perkins, 2003). Educational interventions are functional as they change the behavior leading to positive results in conservation efforts (Bray and Cridge, 2013). The future trend of the new economic forces will be “knowledge, innovation capacity, willingness and

creativity” (Csizmadia, 2019). The essential components for competitiveness and sustainable development ought to be associated with public SDGs-related education, behind which lay a significant network of creative and dedicated educators, professionals who are able to collaborate in mutually positive ways. For both China and CEEC, clean water is essential for various energy production and how to deal with water impacting on the energy production (Pepermans, 2018). The Triglav campaign also demonstrated the newly operating EU4Ocean coalition, which convened three types of education forms and fully covered the literacy of oceanology and supported by the European Commission to raise the significance of EU’s environmental protection awareness, which was a primary call for scientists, science communicators as well as educators, whose collaboration was vital to enhance the effectiveness of the transfer of environmental knowledge and raise subsequent awareness in global scientist academia (Zielinski et al., 2022).

At present, the ocean and ocean-related research and education is considered as a “common good for humanity”, given that the Triglav glacier is rapidly shrinking, the water may be the only thing left of the glacier in a few years’ time. This event is the first of its kind in both Olympic histories adhering to the sustainable sport principle and also the new practice of public education orientation regarding the SDG 14. The event called on people to carry forward the spirit of Olympic solidarity and played their part in curbing climate change. After the Beijing Winter Olympics, the melted glacier water will also be brought back to Slovenia to be displayed in the Mountaineering Museum and will be planted to neutralize greenhouse gas emissions from the event.

Considering the accelerating impacts of human activity on the eco-circulation of SDG 14 that including over-fishing, bioprospecting activities, land pollution and irregular temperature, the international community proposed public calls for the ocean-related environmental protection from both scientific outputs and diplomatic perspective and marine genetic resources (MGRs) for the purpose of medicine and industrial research has been highlighted in various occasions (Enright and Boteler, 2022; Sabbaghian and Singh, 2021). Having it into consideration, the international community possessed two different views (Guilloux, 2017). Firstly, China represents a stance that held by most developing countries to call for a new conservation agreement, the US and Japan insisted in coping with improved legal apparatus without further agreement. EU’s view was moderate and object to take any side with an emphasize on the proper research and genetic recourse conservation, by a fair and equitable common share of the benefits. Thus, all the 14 CEEC countries, whatever the EU members or candidates, have to oblige to follow the EU regulations.

Green development has served as mainstream value orientation of global economic and social development, which played a significant role in the improvement of society and ecology (Cheng and Ge, 2020; Hong, 2022). The commonality from both BRI and the SDGs are apparent long-term strategic developmental plans that prioritize on essential issues in front of nation’s development. Particularly, developing countries played crucial role in climate change process to fulfill low-carbon development, and the efforts of countries along the BRI will significantly affect the overall global carbon emissions and future vision of carbon neutrality.

The Ecology and Environment Cooperation Plan of BRI promulgated in 2017

comprehensively contemplated the common recognition of sustainable infrastructure standards and the promotion of eco-friendly products and services as well as facilitating green international trade and green finance instruments (IDDRI, 2022). Green finance is significant to optimize the resource allocation and effectively cope with the environment deterioration. China introduced a great amount of green investments in the cooperative nations with the promotion of greenery investments and the implementation of global carbon reduction process. In 2019, China and EU and other entities jointly launched the International Platform for Sustainable Finance (IPSF), which dedicatedly put effort to enhance the cooperation in green investment and financing to address the severe situation of climate change (IPSF, 2022). The IPSF included the CEEC countries to attach more attention to high-level cooperation with China on grand strategy of economic growth, resource and environment protection (Huang, 2018).

5. Discussion

China's cooperation with CEE was perceived as component of China-EU relations.

The three Baltic countries' "pull out" from the mechanism conveyed an uncertainty future with China-CEEC, with one of the direct results is the shrinking of the number of the member states. The remaining 14 CEE countries were split by those firmly and ideationally committed to democracy, human right and the rule of law and those looking for illiberal alternatives to continue to attract China's FDI, particularly Hungary in the EU and most non-EU Balkan countries. The pandemic has consolidated this split, some observations concluded that it was the time to "the end of China's romance with the CEE countries" and for China's public diplomacy and for the post-pandemic trajectories of the Belt and Road Initiative. From the very initial "16 + 1" to "17 + 1" and then the current "14 + 1", the China-CEEC relation was in a status of intriguing intersection of the previous historical "brotherhood" with the context of the present as well as the anticipated tasks of the future (Mayer, 2018).

In the state-planned economy era, the scope and scale of trade and economic cooperation from the two sides were relatively limited and the market demands from both sides were given the priority to the ideological and political consideration. Thus, the economic and trade cooperation conducted during the Cold War was perceived as a tool for serving political cooperation. The CEEC region has not played an important role in China's foreign policy, which was, from the view of strategy, still a "small piece" in China-EU relations. The turning point visited due to the global financial and economic crisis, at which China was perceived as economic and political partner for the provider of overall stability in the region (Song, 2019).

China's presence in the region is also making up the insufficient institutional mechanism within the EU, and among which, the European Green Deal (EGD) was a case reflecting the complex of the cross-national and cross-institutional cooperation in reaching the SDGs. The EGD was announced by European Commission on 11 December 2019 and only few months later, the World Health Organization declared the COVID-19 a global pandemic. In such context many political leaders from CEEC addressed that EGD should be cancelled or at least postponed until the economic

recession due to the pandemic. It was said the insufficiency of funding appropriate to EGD is the major concern for cancellation or postponement and also there were critical voices indicating that the EGD was not sufficient to bring the necessary alternations (SAPEA, 2022). EGD strategic plan includes investment, biodiversity strategies, agriculture and food strategies, and other sectoral plans. The most important and specific goal of EGD is to reduce greenhouse gas emissions by 55% by 2030 (from a 1990 baseline), making the EU carbon neutral by 2050 (Kallio et al., 2022).

At present, the China-CEEC cooperative mechanism is not mentioned by any “number +number” anymore. With President Xi’s visit to Serbia and Hungary in May 2024, the significance of Belgrade and Budapest mattered the most. The large investment in Hungary to make the so-called V4 countries serving as a “logistics hub” connecting west European countries and Central Asia. Besides Hungary’s firmly positive role connecting its “Look East Policy” with China-CEEC mechanism, Kauf and Laskowska-Rutkowska (2019) also conducted research to demonstrate Poland as a possible transport center and the location of future site to several benefits such as accelerating economic growth or job creation in China-CEEC cooperation. It’s also noted that the Visegrad countries in the region contributed the largest trade volume with China, which has roared radically in recent years, most of Chinese capital also flowed to the V4 countries compared to other members in the region (Maró and Török, 2022). At present, most of the countries in the CEE region are visa-free to short-stay in China within 30 days except Lithuania, which is considered a trouble maker for China.

6. Policy suggestion and recommendation

Based on the above analysis and discussion, the paper attempts to provide some policy implications. Since twelve of the CEE countries are EU member states, it is recommended that China learn from the EU’s experience and practice of carbon neutrality with joint promotion and the implementation of the vision of temperature rise controlling written in the Paris Agreement with the CEEC, carry out discussion and communication on the potential impacts on climate, ocean, e-waste and other issues of general concerns. It is also important that a mutual exchange of environmental management in terms of policies and regulations, standard systems, and technical methods. In addition, make full use of China’s experience in air pollution control, waste-free city construction, sewage treatment and share relevant policy measures and achievable practices with the CEEC, which strengthened standard convergence and industrial cooperation as well as guiding China’s advantageous environmental protection industries to “go global” to build a consensus on green development CEEC.

The COVID-19 pandemic drew us a clear-but-sharp landscape that the earth was a close-circle system with fragility, proofed by the quick and wide spread of the virus across the globe (Pintér et al., 2012). The ongoing Russia-Ukraine war raises up more challenges on the energy-seeking motivation for most of the European countries to go through the winter. In addition, the 2022 Nord Stream gas leak on 27 September was a new environmental disaster for the climate and human beings, the ocean will a certainty of being polluted by millions of tons methane taking off from the pipeline.

Politically, the leakage is also utilized for the conspiracy-playing games among the major powers, which setup the unpredictable and unsolid trust future for energy-base cooperation such as clean energy, marine emission technology and other possible dialogues on SDGs infrastructure and sustainable system.

The great transformations of our times are happening, from technology like AIGC to the call for respond to climate change, it is essential to ponder the issue of a justice transition at central stage when designing a “Green New Deal”, which is a key necessity to protect and offer a credible alternative to those most affected by relevant change (Kulander, 2020). For the future cooperation and development of the China-CEEC mechanism, it is suggested that Chinese enterprises take advantage of their own core technologies to assist CEEC countries gradually develop renewable energy power generation projects that are currently difficult to complete, and strive to form local creative fulcrum projects to enhance the green impact of China’s FDI.

To strengthen the alignment of China-CEEC cooperation with the sustainable development goals (SDGs), policymakers should prioritize the integration of sustainability criteria into the strategic frameworks guiding bilateral and multilateral initiatives. A critical first step involves establishing a robust regulatory framework that ensures all joint projects meet high environmental and social standards, aligning with both the EU’s Green Deal objectives and China’s commitment to its National Plan on the 2030 Agenda. It is essential for China and CEEC countries to adopt a harmonized approach to sustainability assessments, incorporating rigorous environmental impact analyses and socio-economic evaluations at the planning stage of infrastructure and investment projects.

Furthermore, policymakers must institutionalize mechanisms for transparent data sharing and joint monitoring to track the progress of SDG-related initiatives. This requires the creation of a shared digital platform where stakeholders can access data on project outcomes, fostering mutual accountability and enabling evidence-based policy adjustments. In addition, increased engagement with local stakeholders, including civil society organizations and local communities, is crucial for ensuring that projects address region-specific challenges and do not exacerbate social inequalities. Such inclusive participation will enhance the legitimacy and long-term sustainability of these efforts. Finally, there should be a shift towards financing green technologies and renewable energy projects within CEECs, leveraging China’s expertise in these fields. By doing so, the partnership can contribute to global climate goals while fostering sustainable economic growth. This requires the mobilization of public and private capital through innovative financial instruments, such as green bonds and sustainability-linked loans, to support projects that directly contribute to the SDGs.

In line with it, policy makers and industry practitioner are responsible to promote the transformation and upgrading of CEEC that rely on energy (especially oil resources) as the main economic development model. Since China’s ODI to CEEC are mainly concentrated in other manufacturing industries such as aviation, metal and non-metal products, chemical and other industries, which has caused a large increase in local carbon emissions and it is suggested in these industries to conduct the transformation and technological innovation, and make full use of China’s large market, give full play to the scale effect, and further improve the efficiency of green

investment. The projects between the bilateral cooperation to foster sustainable development, such as the large-scale production and installation of solar panels (SDGs 7 and 13) or infrastructure projects to make cities more sustainable (SDGs 7, 9, 11, and 13) exist (Baraniuk, 2022). However, the current policy and concrete projects are not effectively transferred to the projects related to the China-CEEC cooperation carrying less potentiality to foster sustainable development.

At present, the decision by China to grant visa-free access to citizens of several CEEC represents a strategic move that could significantly enhance bilateral cooperation on the SDGs. By facilitating greater mobility, this policy fosters increased exchange of knowledge, skills, and expertise between China and CEECs, particularly in areas critical to achieving the SDGs, such as sustainable technology, renewable energy, and green infrastructure development. The enhanced ease of travel can accelerate joint research initiatives, business collaborations, and capacity-building programs, thereby promoting sustainable economic growth (SDG 8) and innovation (SDG 9). Moreover, visa-free access can strengthen people-to-people ties, encouraging academic exchanges and cultural understanding that are essential for fostering mutual trust and shared commitment to sustainability. This can be particularly beneficial in advancing SDG 17 (Partnerships for the Goals), as deeper interpersonal connections are crucial for establishing long-term collaborative networks. However, for the full potential of this policy to be realized, it is imperative that the increased movement of people is accompanied by robust sustainability frameworks that ensure that such exchanges contribute positively to environmental and social goals, rather than merely facilitating economic interests.

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