国際関係学院
University of International Relations

AALBORG UNIVERSITY

Research on China-Russia Energy Trade under China's Commitments to Carbon Neutrality

"What is China's Commitments to Carbon Neutrality? And why do China and Russia keep the energy cooperation?"

China and International Relations

Xiaoying Wang

Supervisor: Weiguo Chen

Abstract

This research paper focuses on the energy trade relationship between China and Russia and its potential impact on China's commitment to carbon neutrality. With China's ambitious goal of achieving carbon neutrality by 2060, the country needs to significantly reduce its dependence on fossil fuels, including the energy it imports from Russia. The study will give the introduction to China’s commitment to carbon neutrality and the current state of climate change, and examine the relation of China-Russia energy trade, and the history of C-R cooperation, as well as the economic and political factors driving the relationship. It will also explore the implications of China's commitment to carbon neutrality for its energy trade with Russia from realism, liberalism and constructivism, including potential changes in demand for certain types of energy resources and shifts in the balance of power between the two countries. Finally, the paper will use a case study to deeper understanding why China-Russia keep the energy trade relations under China’s Commitment to carbon neutrality. Overall, this research aims to shed light on the complex interplay between energy trade, geopolitics, and climate change in the China-Russia relationship by using the international relations theories, and to provide insights into how to understand the international actions each country takes.

Key words: Energy Trade; Carbon Neutrality; Liberalism; Realism; Constructivim; China-Russia Relations

Content

1. Introduction

1.1 Climate Change and Carbon Neutrality

A large amount of scientific evidence, with irrefutable facts, demonstrates to the world that global climate change is happening, causing serious impacts on the Earth. Moreover, due to the dependence of traditional development methods and energy consumption structures, the response actions of countries around the world remain relatively slow. To this end, the United Nations Environment Programme (UNEP) emphasizes that "we are facing a threat to survival and must quickly prioritize our attention and actions to climate change... If we continue to move forward on the current situation, the consequences will be devastating."

Therefore, global climate change is a major issue that is related to humankind, and we must actively take actions. Firstly, responses to climate change request a low-carbon transformation of economic and social development worldwide. To slow down climate change, it is necessary to reduce greenhouse gas emissions. At the Leaders' Climate Summit held from April 22 to 23, 2021, the United States, Europe, Japan and other developed countries clearly put forward the carbon neutrality goal and improved the greenhouse gas emission reduction goal. Chinese president also reiterated that China will strive to achieve the strategic goal of "reaching carbon peak by 2030 and achieving carbon neutrality by 2060". In November 2021, before the Glasgow Climate Conference (COP26) in the United Kingdom, more than 50 countries and the entire European Union committed to achieving carbon neutrality, and the goal of zero carbon has been accepted by major economies in the world.

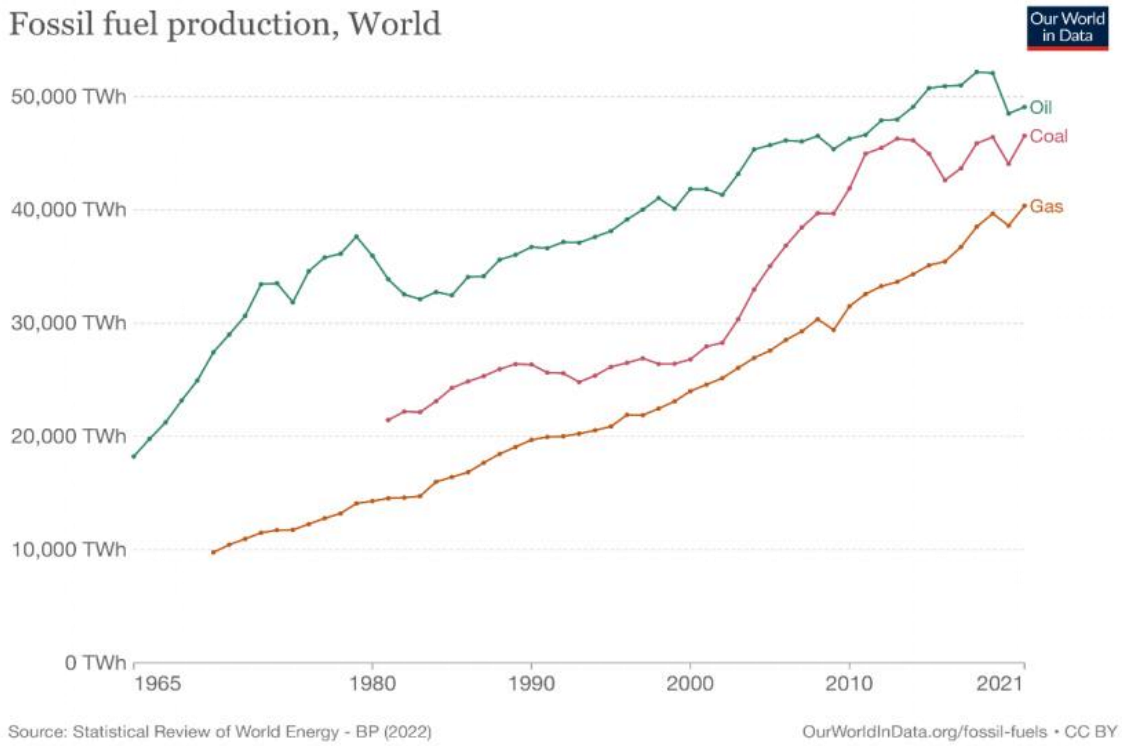
The proposal of greenhouse gas emission reduction and carbon neutrality will undoubtedly shape the industrial structure and social structure of countries on the

track of low-carbon development, and have a huge impact on the economic and social development of countries (Bellacqua 2010). Secondly, addressing climate change will promote the transformation of the global energy structure, reduce or even completely abandon the use of traditional fossil fuels. The production and utilization of energy are the core supporting factors for modern economic and social development. Global greenhouse gas emissions mainly come from energy combustion in economic and social activities. Global climate governance will inevitably promote a clean energy revolution worldwide (Chu 2021).

The main legal document passed by the Glasgow Climate Conference (COP26), the Glasgow Climate Agreement, explicitly proposes to gradually reduce the increasing subsidies for coal-fired power and inefficient fossil fuels. This is the first time in 30 years that global climate negotiations have included coal and fossil fuel issues in the final decision of the Conference of the Parties. It can be seen that, driven by the global response to the new situation of climate change, the world is undergoing a transformation in the mode of economic and social development (Chu 2021). Its core content is to develop low-carbon energy technologies, improve energy efficiency, and optimize energy structure; Transform the mode of economic development, establish a low-carbon economic development model and a low-carbon social consumption model, and use them as the fundamental way to coordinate the relationship between economic development and climate protection.

Despite the fact that climate change is the most significant non-traditional security threat currently facing the world, there is a significant gap between the current international commitments to reduce emissions and the accomplishment of the long-term objectives established by international organizations (Donnelly 2000). The possibility and effect on socio-economic systems have further increased along with the frequency, breadth, and depth of climate catastrophes in many parts of the world (Evans 2022). Fossil fuel emissions are the main cause of climate change and accounted for more than 86% of carbon dioxide emissions in the last ten years (Evans

2022). The primary cause of climate change is the usage of fossil fuels. (Anwar et al, 2020).



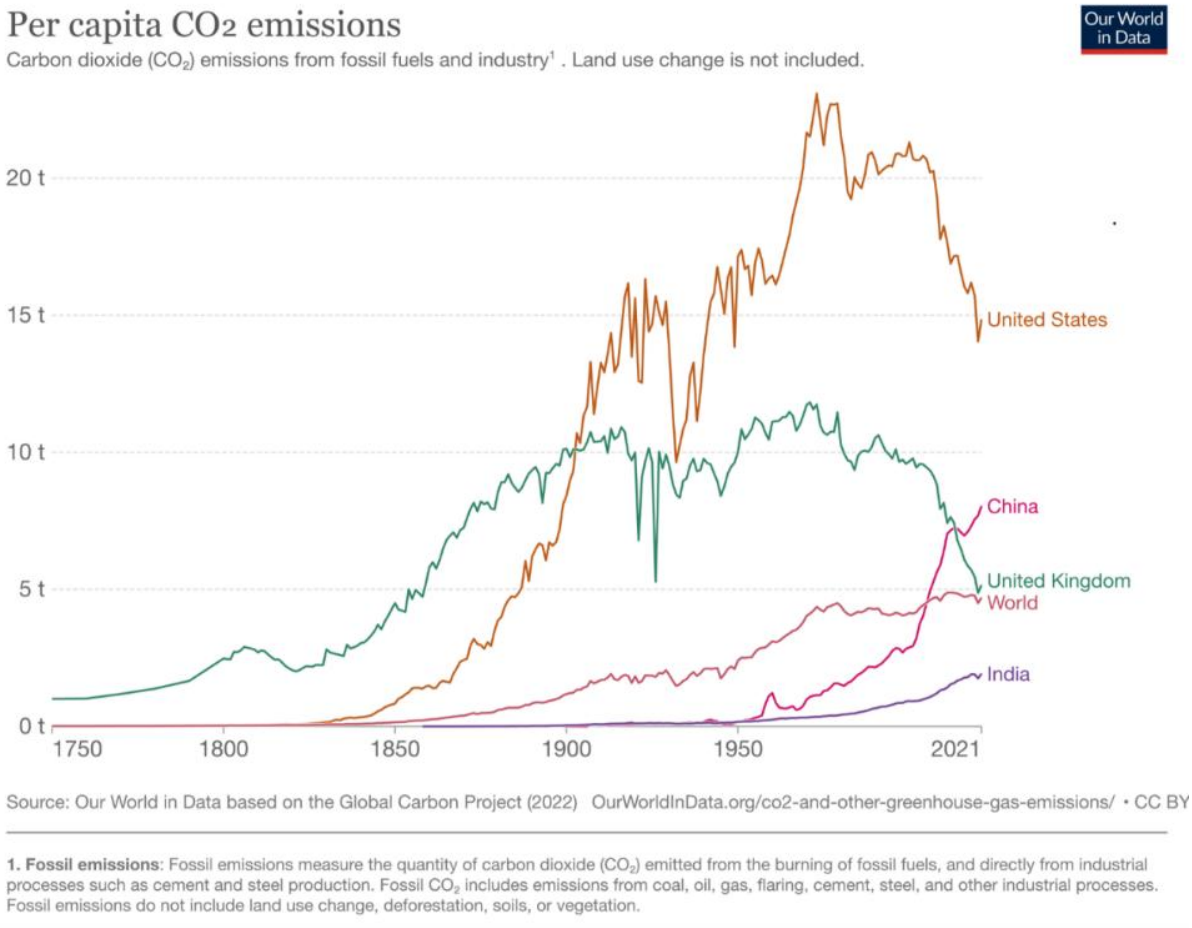
One of the periodic table's necessary elements for life, carbon is primarily released during plant and animal respiration (Giannakidis et al. 2018).

Since human society became industrialized, fossil fuel consumption has increased significantly, and carbon from these energy sources has been released into the atmosphere from the lithosphere. This has led to an increase in atmospheric CO2 concentration and a disruption of the Earth's carbon cycle, which has led to an increase in atmospheric CO2 (Goodall 2020). As a result, the primary goal of carbon neutralization is to lower atmospheric CO2 levels in order to progressively restore the carbon cycle's equilibrium (Feng & Yifei, 2022).

With the help of certified carbon credits, one can achieve carbon neutrality in areas like transportation and travel, daily life, and personal behavior (Henderson, Mitrova, and Oxford Institute For Energy Studies 2016). Carbon neutrality is a business concept that Future Forest of developed in 1997. According to Kauppi and Viotti

2020, carbon neutrality is defined at the product stage as the production process of the subject good or service that does not cause an overall rise in greenhouse emissions to the atmosphere.

A carbon neutral organization, according to the IPCC, is defined as a company's policy behavior of compensating CO2 emissions in a year with CO2 elimination measures such as reforestation, energy conservation, and emission reduction (Lun 2021). In order to be carbon neutral, human activity's carbon emissions must be dynamically balanced with the earth's carbon cycle system. IPCC SR1.5, 2018; Feng & Yifei, 2022; Chi et al., 2021.



At this time, achieving carbon neutrality will need a 45% reduction in global CO2 emissions by 2030. In order to achieve the goals outlined in the Paris Agreement, countries must immediately and explicitly contribute on a national level to reducing greenhouse gas emissions, reaching carbon neutrality in the second half of the 21st

century, and limiting the increase in global surface temperature to 2°C or less (McFall 2022).

However, a significant and long-term decrease in carbon dioxide (CO2) emissions is still feasible and would slow global warming. Although changing the production system might result in a more sustainable society, not all environmental problems can be resolved in this way. Even though improvements in air quality would materialize soon, it might take 20 to 30 years for the planet's temperature to stabilize (Mori 2021).

1.2 International Cooperation on Carbon Neutrality

1.2.1 UNFCCC

In 1979, for the first time, climate change became a priority in the International System agenda (Gupta, 2010), but the starting point of Environment protection was the establishment of UNFCCC in 1992 during the Earth Summit in Rio de Janeiro. The United Nations Framework Convention on Climate Change (UNFCCC) established an international environmental treaty to combat "dangerous human interference with the climate system", in part by stabilizing greenhouse gas concentrations in the atmosphere (Onuf 2013). It was signed by 154 states at the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit, held in Rio de Janeiro from 3 to 14 June 1992. Its original secretariat was in Geneva but relocated to Bonn in 1996. It entered into force on 21 March 1994.

The UNFCCC was designed as a framework convention, specifying its architecture and setting in motion a process toward meeting its ultimate objective. Indeed, the UNFCCC adopted the so called convention- protocol approach, through which the

institutional framework is established under the convention and only as a second step are commitments agreed upon to address the problem at hand through subsequent protocols. This followed the success of the ozone regime, which commenced with the 1985 Vienna Convention for the Protection of the Ozone Layer as a framework, and in turn led to the adoption of the more specific and ambitious 1987 Montreal Protocol (Trubnikov and Richter 2020). But the first concrete step was the Kyoto Protocol in 1997 (Zhang and Kashbraziev 2021). From Earth Summit in Rio de Janeiro in 1992, were developed a, so called, “Conference of Parties” (COP), annual conference with the goal to implement and review Rio Convention. The main COP are: COP3 (Kyoto Protocol), COP11 (Montreal Action Plan), and COP21 (Paris Agreement).

1.2.2 COP3, Kyoto Protocol

Despite international negative sentiment, the Protocol is still considered the starting point of cooperation regarding CO2 and climate change, nevertheless the US withdrew in 2001. Adopted in 1997, it did not contain a long-term action plan or concrete cooperation, instead, it provided a series of definitions and methods to keep up with environmental issues. The Kyoto Protocol includes a menu of measures and policies from which every country can make a selection of most applicable policies (Zhang and Kashbraziev 2021). Despite its importance, the Protocol is fundamentally considered as an international failure for the ineffectiveness of the cooperation proposal. 191 countries joined the Kyoto Protocol, but even among the developed countries there was a climate of instability. After the shift to Republic domination, The United States changed their willingness to participate in the climate change discussion. Russia for the first time had agreed to be part of Kyoto but, after the end

of the Cold War and the consequent fall of the USSR, its own economy collapsed as it was willing to accept an emissions reduction (Zhang and Kashbraziev 2021).

The Montreal Protocol in 2005 served as a meeting between the parties of the Kyoto Protocol to develop a new cooperation meeting in Bali. Indeed, it was followed by the Bali Action Plan in 2007, during COP-13 in Bali was planned future deep cuts needed to keep climate change within safe limits (Goodall 2020).

1.2.3 China's Commitment to Carbon Neutrality

China is the world's largest carbon emitter, accounting for more than a quarter of global carbon emissions. The country's rapid industrialization and urbanization in recent decades have led to significant environmental challenges, including air pollution, water scarcity, and climate change. In response, China has made a significant commitment to addressing these challenges, including its commitment to carbon neutrality.

In September 2020, Chinese President Xi Jinping announced that China would aim to achieve carbon neutrality by 2060. This means that China will strive to achieve a balance between the amount of carbon emissions it produces and the amount of carbon it removes from the atmosphere. Achieving carbon neutrality requires a significant shift away from fossil fuels and towards renewable energy sources, such as wind and solar power.

China's commitment to carbon neutrality is significant for several reasons. First, it demonstrates the country's commitment to addressing global environmental challenges and taking a leadership role in global climate action. As the world's largest carbon emitter, China's actions are critical in the fight against climate change.

Second, China's commitment to carbon neutrality has significant implications for the country's domestic energy policy. Achieving carbon neutrality requires a significant shift away from fossil fuels and towards renewable energy sources. China has been investing heavily in renewable energy in recent years, with a particular focus on solar and wind power. However, achieving carbon neutrality will require even greater investment and innovation in renewable energy technologies.

Third, China's commitment to carbon neutrality may have significant implications for the global energy landscape. China is one of the world's largest energy consumers and has been a major importer of fossil fuels. However, with its commitment to carbon neutrality, China's demand for fossil fuels is likely to decrease, which may have significant implications for global energy markets.

Finally, China's commitment to carbon neutrality may have significant implications for its relations with other countries. China has been criticized in the past for its lack of action on climate change and its reliance on fossil fuels. However, its commitment to carbon neutrality sends a strong signal to the international community that China is taking climate change seriously. This may help to improve China's global image and reputation and enhance its relations with other countries.

China's commitment to carbon neutrality is a significant step towards addressing global environmental challenges and taking a leadership role in global climate action. Achieving carbon neutrality will require a significant shift away from fossil fuels and towards renewable energy sources, which will have significant implications for China's domestic energy policy and the global energy landscape. China's commitment to carbon neutrality also sends a strong signal to the international community that the country is taking climate change seriously, which may help to improve its global image and enhance its relations with other countries.

China's commitment to carbon neutrality involves a series of ambitious targets and policy measures aimed at reducing the country's carbon emissions and transitioning to a low-carbon economy. Here are some of the key details:

1. Peak carbon emissions before 2030: China has committed to peaking its carbon emissions by 2030 or earlier. This means that the country will reach its maximum level of carbon emissions and then start reducing them(“China’s Carbon Neutral Goal” n.d.).

2. Carbon neutrality by 2060: China has set a goal to achieve carbon neutrality by 2060. This means that the country will achieve a balance between the amount of carbon emissions it produces and the amount of carbon it removes from the atmosphere.

3. Renewable energy: China has pledged to increase the share of non-fossil fuels in its primary energy consumption to around 25% by 2030. This will involve a massive expansion of renewable energy, including solar, wind, and hydropower.

4. Carbon capture: China will invest in carbon capture, utilization, and storage (CCUS) technology to help reduce its carbon emissions. This involves capturing carbon dioxide emissions from power plants and industrial processes and storing them underground.

5. Electric vehicles: China has set a target for electric vehicles (EVs) to account for 50% of all new car sales by 2035. This will help reduce emissions from the transportation sector, which is one of the largest contributors to China's carbon footprint(“China’s Carbon Neutral Goal” n.d.).

6. Emissions trading: China has launched a national emissions trading system, which covers more than 2,200 power companies and is the largest of its kind in the world. The system is designed to help reduce emissions by putting a price on carbon.

Overall, China's commitments to carbon neutrality are among the most ambitious in the world. Achieving these goals will require significant investments in renewable energy, carbon capture, and other low-carbon technologies. However, if successful, China's efforts could have a major impact on global efforts to mitigate climate change(“China’s Carbon Neutral Goal” n.d.).

1.2.4 COP26, Glasgow Agreement

In 2021, the last Climate Change Conference was held in Glasgow. Started on 2 November, the 26th international meeting was characterized by a development about green energy. In fact, the theme was 'Greenhouse gas (GHG) Monitoring Project for the Global Stocktake 2023' and participants came together to develop GHG monitoring approaches to support the Global Stocktake. The Global Stocktake (GST)

is a project to monitor international progress towards meeting the standards imposed by the Paris Agreement (Lun 2021). TSOs monitor the long-term performance of the countries that are party to the agreement in order to reduce global greenhouse gas emissions and, consequently, rising temperatures. Compared to previous years, the states agreed to organize TSO meetings every five years and to increase transparency within the controls.

1.3 China and Russia Energy Cooperation

From the perspective of the recent carbon peak targets, the main objective of China-Russian energy cooperation and green development is to strengthen cooperation in the clean development and use of traditional fossil energy, reduce the direct use of highly polluting and high-emission energy sources such as coal and oil, accelerate the transformation of the energy structure, and vigorously promote clean energy projects such as "gas replacing coal", "electricity replacing coal" and "oil replacing gas" (McFall 2022). Natural gas is crucial for China in fostering energy transformation, battling haze, enhancing the atmosphere, and attaining the aim of reducing carbon emissions when it comes to the clean and effective use of fossil energy. In addition, China is a crucial market for reliable gas exports for the Russian energy industry. The International Energy Agency (IEA) estimates that three industries—transportation, industry, and electricity and heat production—account for 85% of worldwide CO2 emissions and are the most important contributors to the "double carbon" aim (Mori 2018).

The most important aspect in meeting the "double carbon" aim is the development of the power industry, which is China's greatest emitter and has a low-carbon footprint. In order to decrease their dependency on coal power and advance the accomplishment

of the "double carbon" target, China and Russia might intensify their collaboration in gas power projects, new energy power, and smart power systems. Since motor vehicle emissions make up more than 80% of carbon emissions in the transportation sector, China and Russia can continue to expand their partnership in clean transportation, new energy vehicles, and transportation infrastructure to support the accomplishment of the "double carbon" objective in the energy sector.

China and Russia's bilateral trade surpassed $100 billion for the first time in 2018 and has been increasing ever since, reaching a new record-breaking $153,938.5 million in trade between January and October of this year. Among them, the trade in traditional energy products like coal, gas, and oil between China and Russia has experienced tremendous increase. The chief economist of National Energy Group, Liu Zhijiang, noted that Russia has been one of the major countries from which China imports coal, and that the total amount of coal exported to China has recently increased to record levels. China imported 57 million tons of coal from Russia in total in 2021, and in the first nine months of this year, imports increased by 11% year over year to 47 million tons, indicating the potential for coal cooperation between China and Russia. This outcome indicates that there is potential for Russian and Chinese coal collaboration. According to Burmistrova, vice president of the management board of Gazprom, "There is no doubt that China is one of the main drivers of the global economy and the most promising gas market in the world, and Russia is one of the world's leading gas exporters, providing a wide scope for mutually beneficial cooperation between Russia and China" (Mori 2018).

1.4 The Research Question

The research question of the project is “what is China’s Commitment to Carbon Neutrality? And why do China and Russia keep on the track of energy cooperation?”

2. Methodology

This chapter is divided into three sections to approach the research question. The research plan will be presented first. Second, we will discuss three theories: constructivism, liberalism, and realism to demonstrate how we will utilize them to assess the study issue. Thirdly, the limits of the analytical framework and the data selection will be discussed.

2.1 Research Design

To clarify why do China and Russia continue their energy cooperation? There are three possible theoretical stances. This is how the overall analytical framework is displayed:

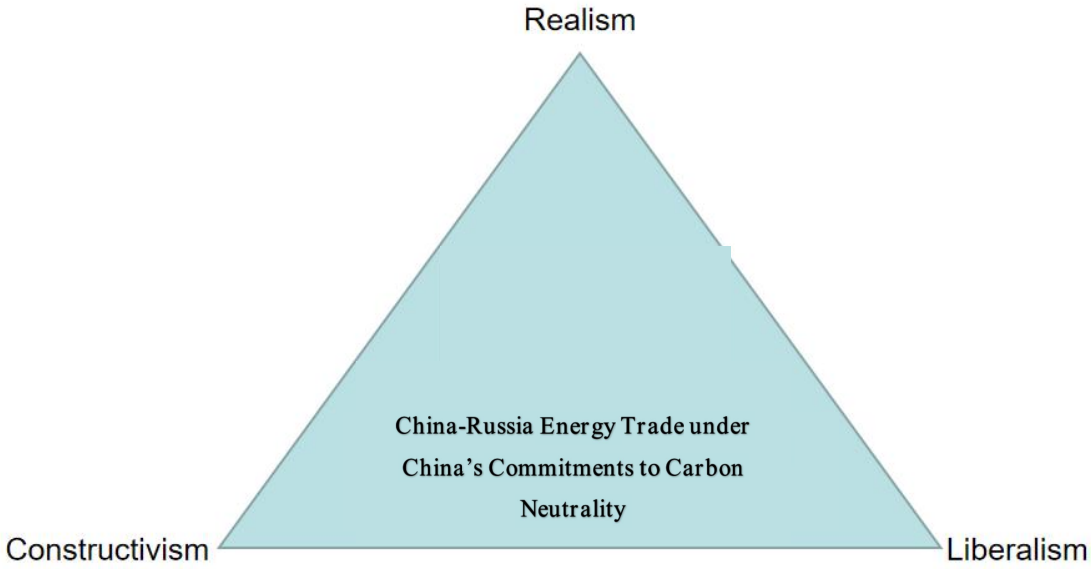


Figure 1 The analytical Framework

The picture shows how this project will analyze the research problem from the viewpoints of constructivism, liberalism, and realism and use a case study to show additional details. China and Russia's efforts to grow more powerful by being carbon neutrality can be explained by the use of realism, which places an emphasis on power

struggles and turmoil, and liberalism is a historic term used to describe international collaboration, and constructivism, which offers a few novel paradigms to define the idea, norms, and culture of international relations. The analytical framework might provide the help to readers to better understand the actions and trade launched by two sides from the three international relations theories.

2.1.1 A Basic Overview of the Research

Energy trade has become an essential component of the international trade and cooperation of countries in the current world. The energy trade between China and Russia has been a topic of significant interest among scholars due to the strong bilateral relations between the two countries. However, with China's recent commitment to carbon neutrality, the energy trade between China and Russia has become more complex. The purpose of this literature review is to provide an analysis of China-Russia energy trade under China's commitments to carbon neutrality from the perspectives of liberalism, realism, and constructivism.

Liberalism Perspective: The liberal perspective of international relations emphasizes the importance of economic interdependence, cooperation, and the rule of law. According to the liberal perspective, states can benefit from international cooperation, and free trade is crucial to achieving peace and stability. In this regard, China's commitment to carbon neutrality has been seen as an opportunity for the country to transition to clean energy and renewable resources.

China has been increasingly investing in renewable energy, with a particular focus on solar and wind power. According to the International Energy Agency, China accounts for more than 40% of global renewable energy investment. China's shift to clean energy has significant implications for its energy trade with Russia. For instance, Russia is one of the world's largest oil producers, and China is one of the world's largest oil importers. However, with China's shift to clean energy, the demand for oil from Russia is likely to decrease.

Despite this, the energy trade between China and Russia is likely to continue due to their strong bilateral relations. Russia is one of China's major trading partners, and the two countries have established various energy cooperation projects, such as the Power of Siberia gas pipeline. In this regard, the liberal perspective emphasizes the importance of international cooperation and the rule of law in facilitating China-Russia energy trade under China's commitment to carbon neutrality.

Realism Perspective : The realist perspective of international relations emphasizes the importance of power, security, and self-interest. According to the realist perspective, states are motivated by their national interests, and international cooperation is only possible when it aligns with their interests. In this regard, China's commitment to carbon neutrality may be seen as a threat to Russia's energy exports.

Russia's economy is heavily dependent on energy exports, and China is one of its major export destinations. According to the International Energy Agency, China accounts for more than 15% of Russia's total energy exports. With China's shift to clean energy, the demand for Russia's energy exports is likely to decrease. This poses a significant challenge for Russia, which may see China's commitment to carbon neutrality as a threat to its national interests.

In response, Russia may be motivated to strengthen its ties with other energy importers, such as Europe and India. This would allow Russia to diversify its energy exports and reduce its dependence on China. From the realist perspective, China-Russia energy trade under China's commitment to carbon neutrality is likely to be influenced by power and self-interest.

Constructivism Perspective: Constructivism emphasizes the role of norms, ideas, and identities in shaping international relations. According to constructivist theory, state behavior is not determined solely by material factors such as power or economic interests, but also by social and cultural factors. Scholars studying China-Russia energy trade from a constructivist perspective have examined the role of identity and norms in shaping the relationship. For example, Sun (2021) argues that the China-Russia energy relationship is driven by a shared identity as non-Western powers that are challenging the dominance of Western powers in the global energy market. He suggests that this shared identity has led to a strengthening of their strategic partnership.

Overall, the literature on China-Russia energy trade under China's commitments to carbon neutrality has been analyzed from various perspectives, including liberalism, realism, and constructivism. While the perspectives differ in their focus, they all contribute to our understanding of the complex relationship between these two countries in the energy sector. Further research can continue to explore these perspectives and their implications for the China-Russia energy trade in the context of China's commitments to carbon neutrality.

2.2 Choice of theories

Liberalism, Constructivism, and Realism were the four international relations theories to be used in approaching the research issue. "Cooperation is beneficial," which can help with the UN General Assembly's goal of achieving carbon neutrality, is the main tenet of Liberal Vision's appraisal of Chinese diplomacy toward Russia. Realists contend that national security is a constant concern, emphasizing self-help and self-survival, but this leads people to behave against the interests of values and the common good. Constructivism encourages a more receptive method of analyzing how countries engage in international affairs.

2.1.1 Realism

Realism was chosen as the alternative to liberalism because it prioritizes a state's survival and self-help over any other goal, which contrasts well with liberalism's emphasis on the pull of values and the general good(McFall 2022).

The idea that governments strive to improve their own power relative to other states is emphasized by realism as an international relations theory. The realism theory is generally recognized with having been developed by E.H. Carr, Hans Morgenthau, Kenneth Waltz, and John Meisheamer. According to this thesis, power is the one thing that is certain in international politics. A strong state will always be superior to its weaker rivals in terms of military might. Realists emphasize the constraints placed on international politics by human nature and the lack of an international government, which together make it primarily a matter of power and interest(Mori 2018). Realists contend that in international politics, the state is the most significant actor.

Realism presupposes that the state is the most significant actor in international politics, that it is aggressive, and that it constantly attempts to ensure its own survival by armies and violence. The fundamental tenet of Morgenthau's theory is that states must seek power since the international community is a self-help system, "rights define interests," and "pursuit of interests leads to the pursuit of power by states." The state being a unified and logical actor is another tenet of the realism theory of international relations. National interests motivate the state to act in unison, especially during times of war.

Additionally, realism focuses on power, notably how the state would be able to secure itself and endure the anarchy it emerges in if it were to retain power (Dunne & Schmidt, Realism, 2020, p. 135). The realist position would claim that when it comes to international cooperation, which would theoretically dismiss the power, "alliances are transient marriages of convenience and essentially represent member states' self-interests" (Fels , 2016, pp. 121-122). By highlighting how self-interest and power dynamics may prevent actors from cooperating on combating Climate Change and achieving carbon neutrality.

The function of power can be used to explain state behavior. While the idea of interest is unaffected by the spatial and temporal environment, the content and manner of power are influenced by the political and cultural context, and the nature of power changes with these spatial and temporal aspects. Power is always the most immediate goal in international affairs, no matter what that goal may be. Power implies that one state influences or controls another state, among other things. According to Morgenthau, power is made up of a variety of interconnected factors, including geography, natural resources, industrial capacity, military power, population, national character, national ambition, diplomacy, and the effectiveness of a government, with the material component of power playing a crucial role(Morgenthau, 2004). Each nation has attempted to uphold or surpass the status quo in its pursuit of power, resulting in an equitable power structure.

The fundamental tenets of realism are, in summary, that states are rational, unitary actors, that states are the dominant actors in the international system, and that states must adhere to the principle of self-help while fighting for survival. The international system is anarchic, which is rather dangerous. Cooperation is less frequent and unstable as a result.

2.1.2 Liberalism

The moral justification for liberalism is that the highest objective of state power is to protect each individual's right to life, liberty, and property. Liberals emphasize the individual's well-being as the primary cornerstone of a just political order as a result. A monarchy or a dictatorship, which both exhibit unfettered power, cannot guarantee the lives and liberties of its people. Liberalism's primary goal is to create institutions that safeguard individual freedom by containing and regulating governmental power.

Liberals prioritize international relations highly despite the fact that they are domestic political issues because a state's actions abroad can significantly affect domestic

freedom. Military-based foreign policies particularly scare liberals. The major problem is that entering war compels governments to strengthen their armed forces. This power can be used to wage war on other countries as well as oppress its own citizens. As a result, liberal democratic systems usually impose restrictions on military power by preserving, among other things, civilian control of the armed services.

China formally declared its ambition to "peak CO2 emissions by 2030 and achieve carbon neutrality by 2060" at the 75th session of the United Nations General Assembly on September 22, 2020. Liberalism, which emphasizes cooperation, is the second theory that has been applied to the subject of this article. Understanding the reasons why nations change their energy sources requires a close examination of climate change and the difficulties it brings. Because liberalism sees the international sphere as a place for cooperation, we can investigate the institutions and agreements created by the international community, specifically by the U.S., EU, and China (UN, 2020).

Governments are rational actors, globalization promotes interdependence between countries, and cooperation is the best approach to achieve the interests of each country, claim Keohane and Nye. There is a justification for global cooperation that international conflicts are unneeded. The maintenance of the basis for collaboration depends heavily on international dynamics. International mechanisms play a significant role in maintaining cooperation. Thus, the state is primarily an interdependent actor, and there is this dependency. The international system is designed in this situation to effectively sustain the state's status as an interdependent state when there are common interests and a desire to cooperate with other interdependent states. In this case, the establishment of the international system can effectively maintain the relative benefits between countries.

Liberalism's emphasis on institutions is particularly relevant in the context of climate change given that the international community has been committed to cooperating to

reduce greenhouse gas emissions into the atmosphere through international agreements and institutions since the UNFCCC framework and the Kyoto Protocol were established in 1997 (Vogler, 2020).

2.1.3 Constructivism

According to constructivism, the world and everything we may learn about it are socially constructed. In this perspective, ontology and epistemology—which are sometimes known as the nature of reality and knowledge, respectively—are referred to. Constructivists contend that states might possess a variety of identities that are created in social interactions with other actors. According to Berenskoetter and Williams (Vogler, 2020), identities are depictions of an actor's conception of who they are, which in turn communicates their interests.

Constructivists believe that identities make up interests and behaviors, hence they are crucial. For instance, the identity of a small state suggests a distinct set of interests than the identity of a huge one. While the large state is obsessed with controlling international political, economic, and military matters, the little state is perhaps more concerned with ensuring its own survival. However, it should be stressed that a state's activities ought to be consistent with who it is.

A key component of constructivism is social norms. Generally speaking, they are described as "a standard of appropriate behavior for actors with a given identity" (Berenskoetter and Williams 2007). States that adhere to a particular identity are expected to follow the conventions connected to that identity. It was chosen because Constructivism places a strong emphasis on "ideas, knowledge, norms, and rules [that] shape [actors'] identities and interests" (Goodall 2020). Since the majority of

agreements connected to climate cooperation and Carbon neutrality, the majority of them act as a form of understanding centered on values and the acknowledgment that Climate Change is a problem and that there is a need to restrict green gas emissions.

Regarding the constructivist viewpoint, Wendt contends that states are components of the global system and that states create anarchy. Wendt's constructivism primarily approaches the idea of the international system from a monistic perspective. According to Wendt, the term "structure" refers to three things: the existence of social systems, the function of material variables, and common knowledge or culture (Goodall, 2020).

The "perceptions" are what make up the core of the international system's structure, and the variations in role identification resulting from these perceptions give rise to various international systems. According to him, a structure is made up of three components: the material structure, the interest factor, and the conceptual element. He also contends that structural components have an independent existence and cannot be reduced to conceptual components. The conceptual structure most accurately describes the physical structure as well as the structure of interest.

The central tenet of constructivism is that an actor's identity is not static but rather built; identity dictates an actor's interests, and interests drive an actor's conduct. While promoting the fundamental qualities of the social environment, this concept subverts materialism. Society is no longer the material object of the rationalist, and neither do material concerns anymore dictate how actors behave. Instead, culture or a set of common ideas has taken on the role of the social object, influencing how matter is perceived, which in turn affects how actors behave. National interest is therefore no longer a guarantee. The state no longer has to act in its best interests. Constructivists assert that the international society consists of at least three cultures—the cultures of Thomas Hobbes, John Locke, and Immanuel Kant—and that human social progress is possible. They also reject the idea that the international system operates according to a set anarchic logic. Human society has largely passed through Hobbesian culture and is

in the stage of Lockean dominance, with some regions moving toward Kant's culture, as evidenced by the emergence of nation-state systems after the Second World War (Gunderson 2016).

2.3 Choice of data

The project's data set includes a case study and empirical data. We will be able to tackle the research subject with the help of case study and other empirical data together.

2.1.1 Empirical Data

The empirical data will be coupled with quantitative and qualitative data for a complete execution of the project. Quantitative information may be used to demonstrate the level and historical progress of green development of China-Russia energy cooperation in this area by using statistics of the number of projects that have been planned and the amount of money that both sides will spend to achieve carbon neutrality. Additionally, qualitative information can be used to indicate how the partnership has developed, how it will continue to develop, as well as its future trajectory.

China and Russia are two of the largest energy consumers in the world, and their energy trade has been a significant factor in their economic and political relations. Empirical data on China and Russia's energy trade indicates a strong and growing relationship between the two countries, with Russia supplying oil and gas to China through pipelines and other channels.

According to the data, Russia is the largest supplier of crude oil to China, accounting for over 15% of China's oil imports in 2020. Additionally, Russia is the second-largest supplier of natural gas to China, with a share of around 20% of China's total gas imports. The data also shows that the two countries have been increasing their energy

cooperation in recent years, with Russia signing several new agreements to supply oil and gas to China. China's dependence on Russian energy has increased in recent years, which has led to a decrease in its reliance on other countries, such as the United States and Middle Eastern countries. This trend is likely to continue as China's demand for energy continues to grow, and Russia remains a reliable supplier.

The energy trade between China and Russia has also had significant political implications. The close energy ties between the two countries have led to increased political cooperation in other areas, such as military cooperation, regional security, and diplomatic ties. Russia has also sought to use its energy exports to China as a way to counterbalance Western economic sanctions against it. However, there are also challenges to the China-Russia energy trade. The two countries have a complex relationship, and there have been disagreements over pricing and other issues related to energy trade. Additionally, geopolitical tensions could potentially disrupt the energy trade between the two countries.

In conclusion, the empirical data on China and Russia's energy trade suggests a significant and growing relationship between the two countries. This energy trade has had a significant impact on their economic and political relations, with Russia becoming a key supplier of energy to China. However, there are also challenges to this trade, and the relationship between the two countries remains complex.

2.1.2 Case study

This project will present a case study: Energy trade between China and Russia after the Russia-Ukraine War: China and Russia signed a new energy trade agreement and will build more energy transport pipelines in the future. I choose this case for two reasons:

First, the conflict between Russia and Ukraine in February 2022 affected the world economy and became a major topic in energy policy. Europe and the United States implemented unprecedented sanctions against Russia using the energy sector as a tool. The global energy market is changing, particularly between Russia and the EU member states. On November 18, RIA Novosti reported that Russia and China had moved to using rubles and yuan for natural gas payments and planned to do the same for other energy suppliers. Initially, it can be seen as both a movement to advance self-interests in light of the unstable and dynamic international environment as well as a strategy to strengthen dedollarization and shrug off US restrictions and sanctions(Gunderson 2016).

Second, the natural gas trade is increasing the clean energy's utilization rate, which is in line with the target of carbon neutrality and is good for the environment. In this instance, I may use it to bolster my claim that positive energy exchange exists between China and Russia. The analysis of the energy trade will focus on the aspects of self-help, cooperation, and international norm based on the tenet of high political trust and mutual benefit between the two nations.

3.The History of China-Russia Energy Cooperation

Right after the founding of People's republic of China, China and the Soviet Union set up a joint venture oil company to exploit the oil and gas resources of Xinjiang. This period of cooperation was mainly concerned with assistance from the USSR to China.

Cooperation between the two sides mainly involved the oil and gas and nuclear energy sectors.

The first phase of energy cooperation between the two nations ran from 1994 to 1999:The foundation for China and Russia's energy cooperation was laid in 1992 when they signed an intergovernmental agreement outlining their shared values for cooperation and trade. In 1993, China officially became an energy importer, which further accelerated the growth of their energy cooperation.

The Angarsk-Daqing oil transmission pipeline project was the first oil supply proposal made to China by the Russian Yukos Oil Company, which was founded in 1993 and declared bankrupt in 2007. Gazprom presented China National Petroleum Corporation Limited with two sets of Russian natural gas delivery plans in 1995: the west line (through Altay) and the east line (by Lake Baikal).

The first stage of energy cooperation between the two countries is characterized by low degree of interaction. Due to the complex situation in Russia at that time (Chechnya war, etc.), China was cautious about Russia at that time and did not regard it as a reliable partner; In addition, China's energy import demand was not high at that time, and its dependence on foreign oil and gas products was not obvious. The first stage of energy cooperation between the two countries is characterized by low degree of interaction. Due to the complex situation in Russia at that time (Chechnya war, etc.), China was cautious about Russia at that time and did not regard it as a reliable partner; In addition, China's energy import demand was not high at that time, and its dependence on foreign oil and gas products was not obvious (Yueh 2010).

The second phase, which lasted from 2000 to 2008, was a crucial turning point in the two nations' energy cooperation. Russia regained its domestic energy potential at the

turn of the century, and its use of energy resources in its foreign policy and economy considerably grew. On the one side, Russia is aggressively working to increase its energy cooperation with the EU, and on the other, it is actively attempting to export energy to China(Yueh 2010). Vladimir Putin made his first trip to China in July 2000, and the two countries later came to an understanding regarding the prospect of Russia's involvement in the development of oil reserves (including exploitation, exploration, and pipeline construction) in the western provinces of China; The two nations signed an intergovernmental agreement on continuing their collaboration in the energy sector that same year, which is crucial to advancing the two nations' energy cooperation;

A new strategy, the Angarsk to Nakhodka oil pipeline project, was presented by Rosneft a year later. China started to experience an uncomfortable energy deficit in 2003, and as a result, it actively sought Russian collaboration in the sector. Rosneft received a $6 billion loan from China in 2004 to help pay for the purchase of Yukos, which had been defeated. The Strategic Cooperation Agreement between Gazprom and CNPC was inked in October of that same year. The agreement establishes the factors of natural gas supply, the execution of projects involving natural gas chemicals between the two countries, the sales of natural gas chemical products in China and the Russian Federation as well as in third countries, and the cooperation in natural gas production in other nations as priority aspects;

The EU attempted to diversify its natural gas import sources in 2006 due to the disparities between Russia and Ukraine in the delivery of energy from Russia to the EU, which on the other hand aided in the growth of Sino-Russian energy cooperation; China will own 25% of the shares in the exploration and exploitation of the Veninsk mining area on the Sakhalin continental shelf (Sakhalin-3 project), which was agreed upon at the first meeting of the Rosneft and Sinopec Cooperation Coordination Committee held on February 5, 2007; Wang Qishan noted that "China and Russia should stick to the following essential concepts in the process of energy cooperation: first, comprehensive and long-term cooperation; and second, abide by market norms.

The two nations' energy cooperation is currently in an exploratory and developing phase (Yueh 2010).

The third phase (2009 to present) is a new development of energy cooperation between the two countries;

China has made a commitment to significantly reduce its carbon emissions and transition to a low-carbon economy by implementing a range of ambitious targets and policy measures. To achieve these goals, China has set a target to reach its maximum level of carbon emissions by 2030 and then begin reducing them, and to achieve carbon neutrality by 2060. Other measures include increasing the share of non-fossil fuels in primary energy consumption to approximately 25% by 2030, investing in carbon capture technology, setting a target for electric vehicles to account for 50% of new car sales by 2035, and implementing a national emissions trading system to put a price on carbon. These goals are among the most ambitious in the world and will require significant investments in renewable energy and other low-carbon technologies. Successful implementation could have a significant impact on global efforts to mitigate climate change.

It is clear that China and Russia's energy cooperation has expanded beyond the conventional relationship between energy supply and demand and is now looking into areas such as energy project investment, joint production, research and development, and sales of high-value-added products. The two nations have started on a new path of mutually beneficial cooperation as a result of the expansion of cooperation channels between the two sides. Even though there are still disparities in the cost of the two parties' products, the two parties' cooperation will be further encouraged in accordance with the values of constructive pragmatism and mutual gain(Yueh 2010).

4. Theoretical Framework and Application

4.1. Realism and Green Development of China- Russia energy cooperation under the background of carbon-neutrality

Realism considers the nation-state as the primary actor, and the pursuit of power is its unique goal, leading to conflicts and competitions in international relations (McFall 2022). This perspective is especially relevant in the context of the Energy Transition and Energy Scarcity, as it reveals how states respond to changes in their energy security and the resulting impact on global power balances. Traditional Realism follows the "statism, survival, and self-help" paradigm, where the state represents the whole, including individuals, policymakers, and businesses (McFall 2022), without considering their influence on the state. Therefore, this approach views energy industries, producers, and green policymakers as part of the state, and their statements and regulations are perceived as representing the state's perspective.

According to Dunne and Schmidt, if the state wants to "survive" in anarchy, it must ensure that it has the resources (in this example, energy) to maintain its economy and well-functioning, both in the short and long terms.(2013) Dunne, Kurki, and Smith Finally, "self-help" relates to the notion that each state actor should be in charge of their own survival. International organizations are opposed because they permit weaker states "to entrust its safety and life to another player" (McFall 2022). This means that the effectiveness of an external body like the United Nations, which would adopt several legally non-binding and thus non-mandatory environmental norms, is undermined because realism places a strong focus on an actor's self-interest.

In contrast to joining forces in a forum to maximize their own benefits, states are more likely to be seen as cooperating to solve a problem through international institutions and accords (McFall 2022). According to that line of thinking, all international agreements and conventions relating to the environment were drafted for egotistical reasons, such as "to persuade domestic publics that something is being done, even though environmental circumstances continue to deteriorate" (Zhang and Kashbraziev, 2021).

In the words of Morgenthau, "the goal of every state, as of every individual, [is] to maximize its power" (Morgenthau and Lang 2004). This would entail producing enough energy to meet one's own requirements as well as having the capacity to import energy for use by other actors. That justification explains why foreign policy makers usually prioritize national interests over ideologies, pursue peace through military means, and acknowledge that great nations may coexist with those who have opposing values and ideologies (Zhang and Kashbraziev 2021). It also clarifies why the present responses by the major actors to energy constraints are consistent with these patterns.

It is inevitable that China's ascent and continued strengthening of its economy and military will have a significant impact on international relations in Asia and perhaps even the entire world.

The following is the foundation for China and Russia's energy cooperation to develop more sustainably: The resource endowments of the two nations are very dissimilar, and the benefits of energy cooperation reinforce one another. Russian energy exports have a crucial strategic role in the country's economic development as a large energy reserve. Due to the impact of shale oil and gas in the United States, the COVID-19, and the US and European sanctions against Russia brought on by the situation

between Russia and Ukraine, the Russian energy industry has started to migrate to the Asia Pacific region in recent years.

Since its own energy sources are insufficient and deficient in oil and gas, China has long had a strong economic development scenario and a sizable market, but in order to meet its economic development needs, it must import a significant amount of energy goods. As a result, China and Russia's relationship in terms of energy supply and demand is complimentary, and since the two nations are neighbors, it is convenient for them to engage in energy trade and green cooperation.

From a realist perspective, security, self-interest, and power are what govern international relations. Therefore, it is possible to assess how China-Russian energy cooperation advances the strategic objectives of both countries as well as potential effects on the balance of power in the international system. Given its sizable population and quickly expanding economy, China has a strong national interest in ensuring energy security. Russia is a desirable partner for China because of its large oil and gas reserves. As a result of political problems with the EU on topics like sanctions, on the other hand, Russia views China as a significant market for its energy exports and is working to diversify its energy relationships away from Europe.

According to realism, the quest of power and security motivates state conduct (Zhang and Kashbraziev 2021). In this perspective, energy cooperation between China and Russia might be considered as a tactical move to advance the interests of both countries. Russia can secure a lucrative market for its energy exports by upping its energy supply to China, which will also lessen its reliance on the European market. Energy cooperation between China and Russia improves China's energy security and lowers its vulnerability to supply disruptions.

4.2 Liberalism and Green Development of China-Russia energy cooperation under the background of carbon-neutrality

Liberalism argues that there is a common interest in the creation of interdependence in the international community (Gunderson 2016), and that cooperation between international communities is facilitated by the urging of common interests. Therefore, we can say that there is an intersection of close interactions between countries: common interests.

Liberal thought is important in this area because, in the first place, the fight against climate change and the aim of carbon neutrality are tied to the interests of the nation, which would promote its long-term growth and prosperity or even its own sustainable development. For many years, China and Russia have collaborated on energy projects, with the Power of Siberia gas pipeline being the most noteworthy. One of the biggest infrastructure projects ever completed, this pipeline will provide China with natural gas for the next 30 years. The initiative, which has been made possible by a combination of private investment and government backing, is a monument to the advantages of liberal economic policies (Gunderson 2016).

Liberals also support free trade, which is essential to China and Russia's collaboration in the energy sector. Liberalism has contributed to the development of a more effective and competitive market by encouraging the free exchange of energy resources between the two nations. As a result, consumer prices have decreased and business profits have climbed, which has furthered economic growth and development.

Liberal thinking has additionally contributed to the growth of renewable energy sources in China and Russia. Both nations have established challenging goals for the

future and acknowledge the value of investing in renewable energy. Liberalism has contributed to the development of a more sustainable future for both nations by fostering innovation and competition in the field of renewable energy(McFall 2022). Collaboration for carbon neutrality might become a common goal among regions experiencing anarchy. Only through addressing greenhouse gas emissions and energy security can the international community engage in regular people-to-people interactions and collaboration. It has created the framework for international collaboration and political, economic, and cultural exchanges. As a result, there are considerable implications of global warming and carbon emissions on national economic interests, and the consequences if greenhouse gas emissions get out of control are unimaginable. The use of fossil fuels has increased significantly as human society has become more industrialized, which has caused the release of carbon from these energy sources from the lithosphere into the atmosphere.

As a result, the carbon cycle on Earth has been disturbed, leading to an increase in the atmospheric CO2 concentration. Therefore, reducing atmospheric CO2 is the primary goal of carbon neutralization in order to gradually rebalance the carbon cycle (Gunderson 2016). As was already said, "the idea of a [...] harmony of interests in international political and economic relations came under challenge in the early part of the twentieth century" (Gunderson 2016). Politicians were also influenced by those historical events to think of peace as an international obligation rather than a universal state. Former US President Woodrow Wilson once stated that "peace [can] only be secured with the creation of [a global] international organization" (Gunderson 2016).

An external threat may be posed to a nation's ally, requiring the establishment of international organizations.

Liberals also claim that the global economic system is characterized by interdependence rather than anarchy, which can promote cooperation (Dunne, 2020). The liberal viewpoint holds that business is "not a zero-sum game, where one's gains are the other's losses, [but] a positive-sum game, where the pie grows bigger and

everyone gains" (Hu 2022). States and people can cooperate as a result for their mutual advantage. Currently, China and Russia actively cooperate in green energy development, which is of great strategic significance in helping the two countries reach their goals of carbon neutrality and carbon peak while also preserving the security of their respective energy systems and promoting sustainable economic growth.

In the current condition of interdependence, nations must rely on the assistance of other nations to fully utilize their own resource advantages if they want to seek faster development. In other words, the need for energy pushes nations to experience rapid development.

The partnership between China and Russia is in line with liberal principles of international cooperation, mutual benefits, economic development, geopolitical interests, foreign policy, counterbalancing the influence of superpowers like the United States, and the role of non-state actors, which is why China and Russia maintain their energy cooperation from a liberalism perspective. Liberalism is in favor of establishing a market economy as a means of fostering global collaboration(Gunderson 2016). Non-state actors' involvement in this relationship enables these two nations to develop an effective market structure for the energy resource.

4.3 Constructivism and Green Development of China- Russia energy cooperation under the background of carbon-neutrality

For many years, China and Russia have worked together in the energy sector, with China purchasing oil and gas from Russia to support its expanding economy. Constructivism would stress the part that social conventions, identities, and ideas have

played in forming the connection between these two nations. From a constructivist perspective, the reasons China and Russia continue their energy cooperation can be deduced from the following factors.

The notion of a "strategic partnership" between China and Russia is a significant norm that has arisen in recent years. This phrase indicates a common understanding of political and economic goals as well as a desire to balance out American hegemony in the world. As it gives both nations the resources they need to maintain their economic growth, the energy industry is a crucial area where this relationship may be put into practice (Hu 2022). Russia and China have historically held quite different perspectives on their roles in the world, with Russia emphasizing its role as a regional state with its own sphere of influence and China emphasizing its status as a rising force. Tensions may result from these divergent identities, especially if one nation feels the other is infringing on its interests or sphere of influence.

The importance of concepts like energy security and environmental sustainability is another key aspect of China-Russian energy cooperation. In addition to maintaining the targets of keeping global warming "below 1.5 °C" compared to pre-industrial levels and achieving zero carbon emissions, both countries are under increasing pressure to switch to cleaner and more sustainable energy sources. However, they also need to make sure that their energy supplies are safe and dependable. Therefore, from a constructivist point of view, the energy trade between China and Russia can be considered as an essential step to emphasize the impact of social norms, identities, and ideas in forming this connection.

Two large nations are taking steps to combat climate change that will help them build their reputations on the global stage. A slower pace of global warming and lower carbon emissions can benefit people all around the world.

One of the most significant aspects of the UNFCCC is that it is not non-binding; as stated in the Paris Agreement, any nation is free to achieve carbon neutrality in the future (Henderson, Mitrova, and Oxford Institute For Energy Studies, 2016). According to Henderson, Mitrova, and Oxford Institute For Energy Studies (2016), since every climate cooperation pact is seen as a "soft law," it is important to consider how people and institutions feel about it. Environmental concerns must be viewed as a genuine, urgent issue from the ground up in order to educate the public and promote significant change. The notion that the subject is optional is a crucial component in the necessity of the constructivism approach to talk about optional topics. Constructivism Theory so thoroughly explains how to address concerns about values and norms, create a carbon neutrality policy, and cooperate on climate change.

As previously said, understanding how people perceive climate change is crucial because it enables the development of specific policies and the creation of ad hoc programs. Globalizations strengthened relationships between various actors, developing soft-power relationships and advancing principles. Social media has recently allowed people to begin learning about the effects that their lifestyle choices may have on other people all across the world. Because of this, people were able to make a difference by changing their habits and becoming more acutely aware of the need to do so in order to rescue the environment. Being two big nations, China and Russia's contribution to clean energy may be crucial in the next years, and taking the initiative in environmentally friendly development may offer a crucial geological solution to achieving the objective of carbon neutrality. (Onuf 2013).

5. Case Study: China and Russia will use RMB and ruble for natural gas trade

5.1 The Overview of China and Russia Using RMB and Ruble for Natural Gas Trade

Russian gas supplier Gazprom announced on Tuesday that it has inked a contract to begin using yuan and rubles as payment methods instead of dollars for gas exports to China. The CEO of Gazprom, Alexei Miller, claimed that accepting payments in both Chinese yuan and Russian rubles would be "mutually beneficial" for his company and Beijing's state-owned China National Petroleum Corporation. China's long-term prosperity is seriously threatened by climate change. The nation is also in a good position to fulfill its development objectives while adhering to its climate pledges and making the transition to a greener economy.

The Country Climate and Development Report (CCDR) for China by the World Bank Group examines the fundamental adjustments that must be made in the country's energy, industry, transportation, cities, and land use if it is to fulfill its national commitments to reach its peak carbon emissions before 2030 and become carbon neutral by 2060 (Onuf 2013). Due to China's significant greenhouse gas emissions, the country's population's high susceptibility to climate hazards, and China's crucial contribution to international efforts to combat climate change, the report emphasizes the importance of taking action. On the one hand, the State Council of China confirmed the goals of reaching carbon neutrality by 2060 in Responding to Climate Change: China's Policies and Actions, which was published in October 2021. To accomplish these goals, energy trade using the RMB and Ruble can firstly easily import energy trade in order to reduce the use of coal or other fuels that produce a lot of emissions.

An major supplementary natural gas agreement between China and Russia has been concluded, greatly stabilizing the security of Russia's energy exports. Russia exports more energy than any other country, whereas China is the biggest exporter of industrial goods globally. In terms of economies and trade, the two nations are very complementary. China and Russia have set an example by conducting substantial goods trade exclusively in local currencies without the use of the US dollar as a middleman. A cycle of capital flow, output, and return through trade and investment is possible for both currencies.

The US dollar's hegemonic position has become more unstable in recent years. The US has long used the US dollar and the SWIFT payment system to negotiate the best terms with different nations (Onuf 2013). Even if the US government does nothing, it can still profit from the global circulation of the US dollar and take income from other nations as long as the US dollar is used for settlement and payment in international trade. The United States has maintained its position as the world's leading power by establishing a global monetary system based on the US dollar since the end of World War II.

Previously, a number of nations have rejected Russia's request to allow the EU to transact in rubles for natural gas. The stability of Russian financial markets, international trade, and financial transactions have all suffered as a result of US sanctions against Russia since the Ukraine crisis, including the freezing of reserves abroad and the expulsion of their top banks from the SWIFT system. Along with immediate steps to stop the flow of dollars, Russia's countermeasures also supported medium- and long-term actions like tying the Ruble to gold, enlarging the range of local currency settlements, and implementing a new international settlement system, which helped to stabilize the domestic economy and financial markets (Weitz 2008). In addition to reducing hazards, they also raised the price of importing particular resources and goods from Russia to nations that had implemented sanctions.

5.2 How to understand China and Russia will use RMB and Ruble for natural gas trade

5.2.1 Answering why China-Russia keep the energy cooperation from a realism perspective

Realism is a theoretical framework that emphasizes the importance of power and the self-interest of states in the international system. In this part, the author will analyze the implications of using RMB settlement for energy trade between China and Russia from a realist perspective (Onuf 2013).

China and Russia are two major powers in the international system. They have been strengthening their strategic partnership in recent years, especially in the economic and energy sectors. Both countries are major energy producers and consumers, with Russia being the largest oil and gas exporter and China being the largest energy consumer in the world. The use of RMB settlement rather than the dollar in energy trade between China and Russia has the potential to shift the balance of power in the international system.

Firstly, the use of RMB settlement in energy trade between China and Russia reduces their dependence on the dollar-dominated international monetary system. This reduces the power and influence of the United States, which dominates the international monetary system through the use of the dollar as a global reserve currency. This move towards the use of the RMB in energy trade could undermine the dollar's position as the dominant currency for international trade, thereby weakening the US position in the global economy.

Secondly, the use of RMB settlement in energy trade could increase China's economic and political influence in the region. China has been seeking to expand its economic and political influence in the Asia-Pacific region through initiatives such as the Belt and Road Initiative (Zhang and Kashbraziev 2021). The use of the RMB in energy trade with Russia could be another step towards this goal. By increasing its economic ties with Russia, China is also increasing its influence over Russian foreign policy decisions. This could enable China to strengthen its position as a major power in the region, which would have significant implications for the international balance of power.

Thirdly, the use of RMB settlement in energy trade between China and Russia could lead to the formation of an alternative economic bloc. China and Russia could use their growing economic ties to form an economic bloc that could challenge the dominance of the Western economic bloc led by the United States (Zhang and Kashbraziev 2021). This bloc could include other countries that are not aligned with the West, such as Iran and Venezuela, which are also major energy producers. This could create a new balance of power in the international system and increase the competition between the Western and non-Western powers.

5.2.2 Answering why China-Russia keep the energy cooperation from a liberalism perspective

By using the direct RMB settlement instead of the US dollar in energy trade between China and Russia has significant implications from a liberalist perspective. Firstly, the use of RMB settlement in energy trade between China and Russia promotes economic interdependence and cooperation between the two countries, as well as the contribution to the environment (Weitz 2008). This can lead to greater economic growth and stability for both countries and less carbon emissions to the whole world. By using RMB, the two countries can avoid the transaction costs associated with currency exchange, which can reduce trade barriers and increase trade volume. The

increase in trade volume could lead to a reduction in the cost of energy imports for China, which would benefit Chinese consumers and promote economic growth. This could also lead to increased investment in the energy sector in Russia, which would benefit the Russian economy.

Secondly, the use of RMB settlement in energy trade between China and Russia can promote regional economic integration. This could create a larger economic bloc that could promote cooperation and stability in the Asia-Pacific region. The use of RMB in energy trade could also encourage other countries in the region to use RMB for their trade transactions, which would increase the global use of RMB and reduce the dominance of the US dollar as a global reserve currency (Weitz 2008). This would promote economic diversity and reduce the risks associated with relying on a single currency.

Thirdly, the use of RMB settlement in energy trade between China and Russia can promote greater transparency and accountability in international trade. By using RMB, the two countries can reduce the dependence on the US-dominated financial system, which can sometimes be opaque and subject to abuse. The use of RMB in energy trade could also lead to greater transparency in the pricing of energy products, which would benefit consumers and promote competition in the energy market. This could also lead to greater cooperation between China and Russia in the energy sector, which would benefit both countries.

5.2.3 Answering why China-Russia keep the energy cooperation from a constructivism perspective

From a constructivist perspective, China-Russia green finance cooperation reflects developing countries' conceptions of "climate change" and acceptance of international norms. On the issue of climate change, the contradictions between developing and developed countries are difficult to reconcile. After years of hard work by

international organizations, non-governmental organizations, and people in the scientific community, cooperation to address climate change has finally become an international norm and consensus. The green financial cooperation between China and Russia shows that the two sides have accepted the international norms of "climate change" and "carbon neutrality", although this international norm is formulated by developed countries. At the same time, this also means that both sides have a conception: China needs to cooperate with Russia to promote regional stability and economic development, and Russia also needs to avoid being an enemy of China and hindering social well-being.

Additionally, it illustrates a change in the norms and values that guide international trade in this case study. The usage of RMB in the energy sector may represent a challenge to the US dollar's hegemonic status as the primary currency for international trade. This change might also represent a challenge to the dominant Western-led international economic order and the guiding principles behind it. The use of RMB in China-Russian energy exchange may portend a move toward a more multipolar international order that is based on diverse standards and principles. Additionally, it encourages better cultural exchange and comprehension of environmentally friendly development between these two economies in order to work toward achieving the carbon neutrality and zero-carbon targets established by international organizations and society.

6. Conclusion

This research paper focuses on the energy trade relationship between China and Russia and its potential impact on China's commitment to carbon neutrality. With China's ambitious goal of achieving carbon neutrality by 2060, the country needs to significantly reduce its dependence on fossil fuels, including the energy it imports from Russia. The China-Russia energy trade has been a key driver of the relationship between the two countries in recent years. China's rapidly growing demand for energy has made Russia an important supplier, and the two countries have developed a strong partnership in the energy sector. However, China's recent commitment to carbon neutrality has raised questions about the future of this partnership, as it pushes for a shift away from fossil fuels towards renewable energy sources. In this thesis, we have examined the China-Russia energy trade under China's commitments to carbon neutrality from the perspectives of liberalism, realism, and constructivism. Through this analysis, we have explored the complex dynamics of the energy trade and its implications for broader geopolitical and economic relations between China and Russia.

From a liberal perspective, the China-Russia energy trade is seen as a mutually beneficial relationship. China's demand for energy has increased rapidly in recent years, and Russia has abundant energy resources, making it a natural supplier for China. As a result, the two countries have developed a strong partnership in the energy sector, with Russia supplying China with significant amounts of oil, gas, and coal.

However, China's commitment to carbon neutrality may change this dynamic in the future. As China shifts away from fossil fuels and towards renewable energy sources, the demand for Russian energy may decrease. This could have significant implications for the Russia economy, which is heavily reliant on energy exports. As such, policymakers in both countries will need to carefully consider the implications

of China's commitment to carbon neutrality for the energy trade and for broader economic relations between the two countries.

From a realist perspective, the China-Russia energy trade is seen as a strategic partnership between two major powers. Both China and Russia have significant geopolitical interests in the energy trade, and both countries are keen to maintain a strong relationship in this area. However, the changing global energy landscape, with a growing focus on renewable energy, may challenge this partnership in the long term.

For example, the United States has been increasingly focusing on renewable energy in recent years, and this has led to a decrease in demand for oil and gas from Russia. China's commitment to carbon neutrality may accelerate this trend, as it shifts away from fossil fuels and towards renewable energy sources. This may challenge the Russia-China energy partnership in the long term, and may have significant geopolitical implications for both countries.

From a constructivist perspective, the China-Russia energy trade is seen as a social construction that is shaped by broader cultural and normative factors. China and Russia have a long history of cooperation in the energy sector, and this cooperation has been shaped by cultural and normative factors, as well as economic and strategic interests.

However, China's commitment to carbon neutrality may challenge some of these norms and values, as it pushes for a shift away from fossil fuels. This may require policymakers in both countries to rethink their approach to the energy trade and to explore new ways of working together in the renewable energy sector. As such, there is a need for continued dialogue and cooperation between China and Russia as they navigate the changing global energy landscape and work towards a more sustainable future.

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