Climate Change Policies of Canada and China

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Abstract. The climate issue has become one of the topics of common concern today. Therefore, climate change policies have become increasingly crucial in domestic economic development and participation in international affairs. However, throughout the development of climate governance, there are similarities and differences in the formulation of climate policies between east and west countries. This paper chooses Canada as the representative of the western countries and China as the representative of the eastern countries to make a comparative analysis of the two countries' climate governance process, the domestic climate actions, and the participation in International Climate Governance in recent years and uses the realism theory to explain. This paper finds that due to the differences in economic development and political systems in the history of Canada and China, the climate policies of the two countries develop differently. However, today, when the climate issue is becoming more urgent, the two countries face the common pressure brought by the climate issue and the common interests in solving the climate issue. Their climate change policies are highly similar.

Keywords: Climate change, Canada, China, Realism.

1. Introduction

The recent half a century has witnessed rapid industrialization and urbanization. The urban area takes up only 4% of the land surface worldwide yet consumes 3/4 of the natural resource and causes 3/4 of the pollution [1]. Its expansion has posed an enormous challenge for the earth, our only motherland----climate change. The sea level has been rising at the rate of 3.6 inches yearly, and according to the United Nations, it will rise 30~60cm by 2100. Energy-related carbon emissions increased 6% in 2021, reaching the highest level ever—no need to mention the increasingly frequent extreme weather these years. Since June 2022, the Yangtze River Basin in China has received 40% less rainfall than the previous years, the least since 1961. The water level of its mainstream is 4.5~6 meters lower than usual, the lowest on record ever [2]. All of the things above are ringing the emergency alarm to us humans. Apart from this, climate action is the 13th goal of sustainable development goals of the UN, and two of its targets are: (1) Integrate climate change measures into policy and planning and (2)Build knowledge and capacity of climate change.

China is the second largest economy in the world and the largest developing country. Indeed, China's rise over 30 years is at the expense of environmental pollution. However, since 2008, China has participated in global climate change governance with unprecedented enthusiasm. It firmly holds the principle of 'A shared future of mankind,' control the burning of fossil fuel, actively promotes 'carbon peak' and 'carbon neutrality and sets the goal of reaching carbon neutrality by 2060. Canada is a member of the G7, playing an essential role on the world stage and undertaking much international duty. It is also a nation with endless ancient forests and six different climate zones, so it highly focuses on climate protection. Therefore, this paper chooses the climate policy of these two countries as the objects of study.

Many papers have illustrated how two countries' climate policy differs and analyzed the motivation behind them. However, few see it from the perspective of international relations theory, for example, Realism. Realism is probably the most popular international theory after WWII. Its central focus is how states will perform in a chaotic, non-central authority world. It also believes that safety is a crucial factor. All the significant power on earth does is reach the 'safe' level through different actions, either competition or cooperation. Under these circumstances, China and Canada, an eastern country and a western country, a developing country and a developed country, socialism and capitalism, all the identities make it necessary to interpret the idea behind their climate change policy from the perspective of Realists.

2. Climate change policies of Canada

2.1. The Development History of Climate Change Policies in Canada

Canada's participation in global climate governance can be summarized as a process from positive to negative and then to positive. In the 1980s, Canada promoted the conclusion of the Montreal Protocol on Substances that Deplete Ozone Layer [3]. In 1988, Canada organized the Toronto Conference, in which countries put forward the " Toronto target." As a party to the UNFCCC, Canada signed the "Kyoto Protocol" in 1998 and formally ratified it in 2002. However, in 2006, Canada announced that it would abandon its emission reduction obligations under the "Kyoto Protocol" and withdrew from the "Kyoto Protocol" in 2011. After the Trudeau government came to power in 2015, Canada announced its active return to global climate governance [4].

2.2. Canada's Domestic Actions in Recent Years

Based on Canada's 2030 emissions reduction plan, the domestic actions of Canada's climate policy mainly include the following directions: setting a price on carbon pollution, increasing the development and utilization of clean fuels, and accelerating the economic transition to clean development [5].

2.2.1 Setting a Price on Carbon Pollution

Starting in 2019, Canada has put a price on carbon pollution in all jurisdictions, a policy that is an essential Canadian response to climate change. Canada does not force all regions to obey the unified federal pricing. Instead, the federal government has set a minimum carbon pollution emission pricing standard, allowing provinces and regions to independently price carbon pollution emissions based on the minimum standard and thoroughly consider their specific conditions. Regions that opt for discretionary pricing and discretionary pricing that does not meet federal standards are subject to federal pricing. Canada's flexible pricing policy can effectively curb carbon pollution emissions while respecting the development of provinces and territories. The Canadian government updated federal pricing standards in August 2021, and provinces and territories must meet the required standards between 2023 and 2030.

2.2.2 Increasing the Development and Utilization of Clean Fuels

Considering the vital role of clean fuels on the road to net zero emissions, Canada has developed and implemented a series of measures to develop and utilize clean fuels. For example, Canada has drawn up and introduced Clean Fuel Regulations and released the Canadian Hydrogen Strategy with related energy groups. At the same time, Canada has also formulated an Energy Innovation Program and established a Clean Fuels Fund to support the development of the domestic clean fuel market.

2.2.3 Accelerating the Economic Transition to Clean Development

Canada has adopted policies to accelerate economic transformation and development to achieve the decarbonization goal. From 2016 to 2021, Canada invested $100 billion more than the US in technological innovation and clean energy to promote decarbonization, emission reduction, and clean economic development. Canada has established a Low Carbon Economy Fund and a Challenge Fund

to support the development of large-scale construction projects, enterprises, and community organizations in the region and to help regions and enterprises to complete development transformation. At the same time, Canada has also set up the Climate Action and Awareness Fund, which is used to improve public awareness and environmental protection capacity. This fund has made significant contributions to Canada's emission reduction plan.

2.3. Canada's International Participation in Recent Years

In terms of international participation, Canada plays an active role in today's global climate governance. Canada is an essential member of the G7 summit. In 2017, Canada, together with the governments of Mexico, Chile, Colombia, Costa Rica, and the United States, issued "the Declaration on Carbon Markets in the Americas" to strengthen cooperation in the carbon pricing system on the American continent. Canada is also actively providing climate financing assistance to other countries. For example, it has allocated 30 million Canadian dollars to "the Least Developed Countries Fund" to help fragile countries meet the needs of adapting to climate change.

3. Climate change policies of China

3.1. The Development History of Climate Change Policies in China

Compared with Canada, China's climate change policy has also experienced a change in its development process. In November 1992, China officially ratified the UNFCCC in China, becoming one of the first countries to conclude the UNFCCC. After the "Kyoto Protocol" was reached, China insisted that it would not undertake the obligation of quantitative emission reduction before it developed into a moderately developed country. However, after 2007, China's attitude and position changed. Although China still believes that developing countries should not undertake emission reduction obligations at this stage, they should also take measures to control the growth of greenhouse gas emissions according to their national conditions. After 2015, China actively participated in the negotiation of the "Paris Agreement" and gradually became one of the leaders of global climate governance.

3.2. China's Domestic Actions in Recent Years

China's domestic actions to cope with climate change can be summarized as the transformation of production and consumption. The first is the industry's transformation to low energy consumption and emissions. Similar to Canada, China is also building a clean energy system. In addition, as a populous country with massive consumption of resources, China has also introduced some policies to promote green consumption, such as step electricity prices, step water prices, and resource tax reform. Furthermore, similar to Canada's carbon pollution price, China is also trying to build a nationwide carbon emissions trading system.

3.2.1 Clean Energy System

As the key to China's control of greenhouse gas emissions, the energy sector has consistently received the attention of the Chinese government. In recent years, China has insisted on vigorously supporting energy conservation and emission reduction, introduced policies to promote the adjustment and transformation of the energy structure and promoted the construction and improvement of a clean, low-carbon, safe and efficient energy system. China has formulated a new energy security strategy, paying close attention to energy consumption and supply, promoting the green and clean development of non-fossil energy by promoting technological revolution, and strengthening the development and utilization of hydropower, wind energy, and solar energy [6]. At the same time, on the premise of ensuring safety, China is also actively developing nuclear power and renewable energy, such as biomass, geothermal, and ocean energy, according to the different conditions in different regions and strives to improve the level of energy utilization.

3.2.2 Green Consumption

At the beginning of 2022, the Chinese government formulated the "Implementation Plan for Promoting Green Consumption", hoping to promote the formation of a green and low-carbon consumption system [7]. In the document, China emphasized the consumption transformation in clothing, food, housing, and transportation and focused on developing new energy vehicles and energy-saving household appliances.

3.2.3 Carbon Emissions Trading System

Building and improving the carbon emission trading market is vital for China to achieve carbon peaking and carbon neutrality goals. The development of China's carbon trading market is the path from pilot cities to the opening up of the country. Since its establishment in 2011, China's carbon trading pilot has covered more than 20 industries and nearly 3000 enterprises, with a cumulative turnover of more than 10 billion yuan [8]. At the initial stage of establishing carbon emission trading markets in pilot provinces and cities, policies and measures focused on the construction and improvement of carbon emission trading, carbon emission control, carbon quota management, and other systems. China has improved its carbon trading behavior through laws and regulations and standardized and guaranteed the orderly development of the carbon emission trading market. On Jul 16th, 2021, the national carbon emission trading market was officially opened.

3.3. China's International Participation in Recent Years

China's international participation in global climate governance can be summarized as from follower to leader. In recent years, China has proposed the "Human and Natural Life Community" concept, attempting to get a leading position in global climate governance. China has actively participated in various international climate conferences, cooperated with the World Bank and the Asian Development Bank, and established the "China South-south Climate Cooperation Fund" to provide climate financing assistance to developing countries.

The specific differences between Chinese climate policies and Canadian policies can be seen in Table 1.

Table 1. Comparison of Climate Change Policies between Canada and China in Recent Years

	Canada's Climate Change Policies	China's Climate Change Policies
Domestic Action	● Setting a Price on Carbon Pollution ● Increasing the Development and Utilization of Clean Fuels ● Accelerating the Economic Transition to Clean Development	Production and Consumption Transformation： ● Industrial Restructuring→Low energy consumption and emission ● Building a Clean Energy System ● Green Consumption→Step electricity price, step water price, resource tax reform ● Nationwide Carbon Emissions Trading System
International Participation	● "CANADA IS BACK" ● G-7 Summit ● The Declaration on Carbon Markets in the Americas ● The Least Developed Countries Fund	From "Follower" to "Leader": ● Human and Natural Life Community ● China South-South Climate Cooperation Fund ● Ministerial Conferences on Climate Change ● Cooperation with the World Bank and the Asian Development Bank

4. Comparison

In recent years, Canada and China have shown a very positive attitude towards climate change in domestic and international participation.

In terms of climate change policies, why are Canada and China different in the past development process but highly similar in recent years? This change may be because Canada and China have differences in economic development and political systems, but they have vital common interests in the face of climate change.

4.1. Differences in the Historical Development Process

In the past development process, as China is a developing country, its climate change policies have changed with its economic development and have always been centered on national economic interests. Canada has long reached the level of developed countries. It has a more optimized economic structure and a solid economic foundation to support its participation in climate governance. However, Canada is a federal capitalist country, and the formulation of its climate policy is greatly affected by the change of ruling parties and domestic energy interest groups[9]. As a one-party socialist country, compared with Canada, China's climate policy is not troubled by domestic capital groups and has more robust continuity and stability.

4.2. The Common Interests Faced Today

In today's world, the impact of climate change has become a problem that countries all over the world need to face. Both Canada and China face the pressure of energy structure restricting economic development and international public opinion requiring them to participate in climate governance actively. Canada and China's domestic economic development and the improvement of their international status and voice require them to formulate active climate change policies to deal with global climate issues.

The differences in domestic conditions and common interests between China and Canada can be seen in Table 2.

Table 2. Differences in Domestic Conditions and Common Interests between Canada and China

		Canada	China
Different	Economic Development	Developed country	Developing country
	Political System	Federalism Capitalism	One party system Socialism
Common		Impact of climate change The need for domestic economic development International pressure on public opinion	

4.3. Realistic Theory Explanation

In a world without a legitimate central authority, how will states behave to ensure their security from each other? This is the main focus of all realists. Also, they thought safety was the most crucial factor. On this occasion, the world's major power will compete to reach a ‘safe’ level for climate change and lose trust in each other. Cosmopolitan values will be routinely overtaken by the selfish national interests of nations.

Indeed, Realism never denies the possibility of cooperation. However, cooperation may be too fragile because cooperation means sacrificing for a particular country, which may stand for weaker power in the long term. Therefore, it seems easy to understand why major world powers do not always do enough to address to solve the problem. In this situation, there is no global authority to enforce and supervise the execution of agreements or actions. While countries lose mutual trust, they can only wait until global warming worsens [10].

Using this theory, explaining some of China and Canada's climate policy is easier. Although China's diplomacy policy is to 'keep a low profile after June 1989, as a rising world power, it has inevitably been accused of 'environment-threatening,' which is not a safe signal for the country. Therefore, China's participation in global climate change started by cooperating with the European Union from playing a leading role in regional organizations like BRICS and the Belt and Road. It has built 'green BRICS' by establishing a climate cooperation system and promoting sustainable development and energy transition [11].

As for Canada, the Realism theory can be seen in its withdrawal and rejoin of the Kyoto Protocol. In 2012, the conservative government under the leadership of Stephen Harper announced its withdrawal from the protocol, as $14bn in penalties would be saved for not achieving the Kyoto protocol. Furthermore, the government does not want to hurt Canada's thriving oil sands sector. It is the country's fastest-growing source of greenhouse gases. (The world's third-largest oil reserves, Canada has more than 170bn barrels.) Hence, fossil fuels have a firm grip on Canada economically and politically. "The Canadian government is a wing of the oil industry." Said Bill McKibben of 350. org. Then in 2015, under Trudeau's governance, Canada is back to Kyoto Protocol, emphasizing the increasing need for global cooperation towards climate change. Canada also rejoined because Canada faced massive global criticism during these years.

5. Conclusion

With industrialization, economic development has had a significant impact on the world's environmental climate. This study focuses on Canada and China as representatives of North American and East Asian countries, respectively, by examining the climate policies and future goals of these two countries in recent years through realist theory. Canada's policies to put a price on carbon pollution, produce and use clean fuels, and advocating the transformation to a clean growth economy since its withdrawal from the Kyoto Protocol are presented; China's policies to transform its production and consumption, such as carbon emissions, clean energy systems, and green consumption, after signing the United Nations Framework Convention on Climate Change and participating in negotiations on global climate governance, such as the Paris Agreement. In terms of Realism, the reason why these two countries, both of which have a high status in the international community, have never cooperated can be explained. The Chinese government's diplomatic policy is to keep a low profile, while the Canadian government is trying to avoid a $14 billion fine and keep its booming oil industry intact.

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