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Master's Thesis of International Studies

China's Environmental Policy Transformation: Impacts on Global Environmental Governance

중국의 환경정책 변천과 글로벌
환경거버넌스에서의 영향

August 2023

Graduate School of International Studies
Seoul National University
International Cooperation Major

Young Jea Choi

China's Environmental Policy Transformation: Impacts on Global Environmental Governance

Advisor Cho, Young Nam

Submitting a master's thesis of
International Studies

August 2023

Graduate School of International Studies
Seoul National University
International Cooperation Major

Young Jea Choi

Confirming the master's thesis written by
Young Jea Choi

July 2023

Chair	<u>Sheen, Seong-Ho</u> (Seal)
Vice Chair	<u>Song, Jiyeon</u> (Seal)
Examiner	<u>Cho, Young Nam</u> (Seal)

Abstract

This paper examines China's transformation of environmental policies and their implications for global environmental governance. The research analyzes the evolution of China's environmental approaches over time and explores their effectiveness in reducing carbon emissions. To answer these questions, the study evaluates China's internal strategies through Five-Year Plans for China (FYP) and external responses to major international environmental agreements such as the United Nations Framework Convention on Climate Change (UNFCCC)' s Conference of Parties (COPs).

The research findings highlight the challenges and opportunities that China has faced in implementing its environmental policies, and assesses the effectiveness of these policies in reducing carbon emissions. Furthermore, the research underscores the significance of China's participation in global environmental governance efforts, and emphasizes the importance of collaboration between China, the EU, and the US to address the pressing environmental issues of our time.

This study adds to the ongoing debates about environmental governance on a global scale, emphasizing China's critical role. The article concludes that a comprehensive understanding of China's changing environmental strategies is essential for effective global environmental governance.

Keywords: China's environmental policies, Five-Year Plan,

UNFCCC COPs, Global environmental governance

Student Number: 2021–22182

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Chapter 1. Introduction

1. Study Background

China's rapid economic growth over the past few decades has brought about significant environmental challenges, making it the world's largest carbon emitter. As such, China's role in global environmental governance has come under scrutiny. Despite being a member of the United Nations Framework Convention on Climate Change (UNFCCC) and obligated to cooperate in responding to climate change, China has often cited its status as a developing country to transfer responsibility to advanced nations. This dual attitude has raised doubts about China's commitment to environmental protection and sustainable development.

However, in recent years, China has taken significant steps toward protecting its environment, including the introduction of specific carbon reduction policies. While these changes are encouraging, they have not yet fully convinced the international community of China's commitment to environmental protection.¹ Therefore, understanding China's environmental policy transformation and its impacts on global environmental governance is essential. understanding China's environmental policy transformation and its impacts on global environmental governance

¹ The Economist London, "China wants to defend the global environment. That will require it to embrace global norms," https://www.economist.com/china/2019/01/26/china-must-embrace-global-norms-if-it-wants-to-defend-the-environment?gclid=CjwKCAjw3ueiBhBmEiwA4BhspLTQn0gI_PVJnbnFgFEXQJABCIzWzH4R_8EFTs2MnOCx9Q7hJ7EN1xoCb2kQAvD_BwE&gclsrc=aw.ds (accessed date: Jan.18th.2023)

is essential.

Changes in China's environmental policy have been gradual, driven by the country's economic development and resulting environmental impact. These internal environmental policy changes have been accompanied by changes in China's external policies, which have been influenced by external pressure and the country's expanding role in the international community. As such, it is crucial to examine the effectiveness and relevance of each internal and external policy to gain a comprehensive understanding of China's environmental policy transformation. By doing so, we can better predict how these changes will shape China's future role in global environmental governance.²

This article aims to comprehensively analyze China's environmental policy changes and their implications for global environmental governance. The study addresses two primary research questions: To what extent is China actively working towards environmental improvement as the largest carbon-emitting country, and what potential impact do these efforts have on the international community and global environmental governance. To achieve this, the study will review China's Five-Year Plan(FYP) and external policy responses to major UNFCCC COPs. By examining the relationship between China's internal and external policies, the research seeks to gain insight into the country's evolving role in global environmental governance. Moreover, the

² Lindsay Mazland, "China ' s Fight Against Climate Change and Environmental Degradatio,"<https://www.cfr.org/background/china-climate-change-policies-environmental-degradation> (accessed dates: March.26th.2023)

study will analyze how China's policy changes affect the environmental sector and explore opportunities for cooperation between China, the US and the EU which are currently leading countries in global environmental governance. Through this analysis, the research aims to contribute to a deeper understanding of the implications of China's environmental policy transformation and its potential impact on global environmental governance.

2. Literature Review

According to 2021 data, China's national average temperature has gradually risen over the past 70 years, with the highest observed increase since 1951 being 0.7°C.³ This temperature rise has resulted in natural disasters such as floods and landslides, highlighting the urgency of responding to China's environmental degradation. While previous studies have analyzed changes in China's environmental policy over time and the influence of major UNFCCC meetings, but these studies often focus on numerical data on changes in the Chinese environment after policy implementation without fully exploring the correlation between internal and external policies. Furthermore, there is limited discussion on the potential for comparison and collaboration between China, as a developing country, and the US and EU, who are significant players in global environmental governance.

³ 中华人民共和国生态部, “2021中国生态环境状况公报”. (May 2022).

2.1. Evaluation of China's Internal Environmental Policy

While it is evident that China has made changes to its internal environmental policies, there are differing views on the effectiveness of their implementation. Xie Zhenhua believed that since 1972, China implemented a series of environmental management system reforms every decade to address growing environmental problems at various stages of development. Compliance principles such as "33211"⁴ and "1 Control and 2 Compliance" were established to advance the successful and green development of curbing pollutant emissions, promoting a circular economy, saving resources, and building an environmentally friendly society.⁵ This indicates that China's internal environmental policies became gradual and developed as legitimized laws.

According to Gao and Wang, only seven cities across the country had achieved environmental efficiency. However, China implemented the "Blue Sky Protection Campaign" and the "One City One Policy" project to improve air quality. As of the beginning of 2019, 3.89 million air mass problems had been improved, and 1,009 out of 1,062 instances of water blackening in China's 36 key cities had already disappeared. These efforts demonstrated the effectiveness of China's environmental policies.⁶ However, China's

⁴ "33211" is pollution control program. It covered three rivers (Huaihe, Haihe and Liaohe), three lakes (Dianchi, Taihu and Chaohu), two pollution control parameters (sulphur dioxide and acid rain), one city (Beijing) and one sea (Bohai).

⁵ Xie, Z., "China's historical evolution of environmental protection along with the forty years' reform and opening-up", *Environmental Science and Ecotechnology*, 1, 100001, (2020).

⁶ 高阳, & 王江鑫, 基于四阶段 DEA 模型的中国环境现状效率评价, *科技和产业*, 22(02), (2022), p.100-105.

carbon emissions continue to increase, which challenges the argument that China's environmental policies have resulted in significant environmental development. This suggests that while China's environmental policies have been effective in some areas, such as improving air quality, they still face challenges in reducing various pollutant emissions.

Miranda A. Schreurs argued that China's environmental policy underwent changes, but its direction depended on its leaders' priorities regarding economic development. Initially, environmental protection was a significant concern, and policies reflected this priority. However, as the economy became more important, leaders' levels of interest in environmental policy varied, leading to different perspectives and approaches to climate action.⁷ This variability created challenges in pressuring leaders to prioritize environmental concerns in policymaking, suggesting that changes in environmental policy were fluid rather than gradual.

On the other hand, Zhang Zhongxiang raised questions about the effectiveness of China's environmental policy implementation. He argued that the Clean Development Mechanism (CDM) had a limited impact on reducing carbon dioxide emissions in China between 2000 and 2008. Despite the implementation of the CDM, carbon dioxide emissions did not decrease significantly, which suggests that the policy was not successful in achieving its intended outcomes.⁸

⁷ Men, J., Schunz, S., & Freeman, D. (Eds.), *The Evolving Relationship Between China, the EU and the USA: A New Global Order?*, (Routledge, 2019), Chapter.11 pp.248 – 271

⁸ Zhang, Z. *Energy and environmental policy in China: Towards a low-carbon economy*. (Edward Elgar Publishing, 2011), pp.75–79

Zhang et al. pointed out that China's total factor energy efficiency is lower compared to other major CDM host countries due to its lack of technology. It was found that the use of optimal technology in advanced countries could reduce energy consumption per unit GDP by an average of 81.98%.⁹ Thus, China's environmental policy is effectiveness depends on the development of related technologies.

China's domestic environmental regulations and their execution have been extensively studied, highlighting their complexity and diversity. The literature presents varying perspectives on the effectiveness of China's internal environmental policies. While some argue that these policies have successfully improved air quality and reduced specific pollutants, others emphasize challenges in reducing carbon emissions and limited impact of certain measures like the Clean Development Mechanism. Consequently, it is essential to review the evolution of these policies over time due to the contrasting evaluations presented in the literature.

2.2. Evaluation of China's External Environmental Policy

Evaluating China's internal environmental policies, it's important to analyze the impact of its external policies on the global environment. This includes China's efforts to mitigate climate change and its participation in international climate agreements. Several studies have evaluated the effectiveness of these policies.

⁹ Zhang, Y. J., Sun, Y. F., & Huang, J, Energy efficiency, carbon emission performance, and technology gaps: Evidence from CDM project investment, *Energy Policy*, 115 (2018), pp.119–130.

Zhang and Barr argued that China's growing interest in environmental policy had increased since the Kyoto Protocol.¹⁰ However, the interpretation of the impact of these policies can be different depending on whether they were driven by domestic demands or international obligations.

Wang and Chang noted the Chinese government's active participation in international environmental governance, including the announcement of six response principles under the United Nations Framework Convention on Climate Change (UNFCCC) system. The "National Climate Change Response Strategy" unveiled in 2013 further demonstrated China's respect and appreciation for the UNFCCC system. Consequently, the authors argued that funding policies aimed at reducing pollution have emerged domestically, indicating China's willingness to take action on climate change.¹¹

Evaluating China's external environmental policies reveals a mixture of progress and challenges. It is necessary to examine whether changes in these policies have occurred as a result of the influence exerted by domestic environmental policies.

2.3. Effects of Environmental Policy in China and Its Impact on Global Environmental Governance

There are various views on the changes in China's environmental policy and their effects. In this context, the impact of China's

¹⁰ Zhang, J. Y., & Barr, M, *Green politics in China: Environmental governance and state-society relations* (Pluto Press 2013).

¹¹ 왕효, 장동식. “UNFCCC 체제에 대한 중국정부의 정책대응과 탄소세 제도 도입방향에 관한 연구”. 『法과 政策』 제21집 제2호 (제주대학교 법과정책연구원, 2015)

environmental policy on global governance has been discussed. Schunz et al. argued that China's environmental policy has been shaped by its obligations and pressures required by international environmental conventions. Since the Paris Agreement, China's role in global environmental governance has become increasingly important. As an active negotiator, China's opinions have a significant impact on the functioning of global environmental governance, China has maintained its developing country status under the UNFCCC, which allows it to receive favorable treatment and financial assistance.¹² However, this stance has faced criticism for being contradictory and raises questions about China's true commitment to addressing global environmental challenges. Therefore, it is essential to examine in greater detail how China's developing country status will influence its role and impact on global environmental governance. This examination, in turn, is expected to foster cooperation within the international community. While China demonstrates an interest in environmental protection, it is crucial to investigate whether its actions genuinely reflect cooperative efforts, especially given its involvement in the establishment of carbon-emitting energy industrial complexes in other countries.

3. Methodology

The study employed qualitative research methods, primarily

¹² Men, J., Schunz, S., & Freeman, D. (Eds.), *The Evolving Relationship Between China, the EU and the USA: A New Global Order?*, (Routledge, 2019), Chapter.9, 10 pp.204 – 246.

relying on China's policy papers. The research focused on the analysis of China's Five-Year Plans, specifically examining the 10th to 14th plans. Various papers published by the Chinese government were utilized, including documents, decisions, party-authored reports, and resources from major Conference of Parties (COPs) of the United Nations Framework Convention on Climate Change (UNFCCC). In addition, articles from journals such as CCTV and Xinhua News Agency were considered. Data on CO₂ emissions from the World Bank were incorporated as well. Distinct from previous studies that primarily aimed to identify the causes of environmental policy, this research aims to comprehensively examine the interrelationship between China's internal and external environmental policies. To address the limitations of previous research, this study reviews the contents of both internal and foreign policies and examines future policy directions based on policy announcements. Furthermore, the implementation of these policies is examined to determine their effectiveness in achieving environmental improvements, particularly in terms of reducing pollutant emissions. The study also explores how China's actions impact international environmental governance through its relations with leading countries. Adopting a mixed-methods approach that combines a systematic literature review and quantitative data analysis, this research seeks to provide a comprehensive understanding of China's environmental policies and their impact on global environmental governance.

Chapter 2. Changes in China's Environmental Policy

1. The Evolution of Environmental Policy in China

China's environmental policy has undergone significant changes over the past few decades, driven by the country's rapid economic growth and the resulting environmental challenges it faced. Initially, China's environmental policy heavily relied on command-and-control laws, primarily focusing on policy-level actions. However, as time progressed, China progressively turned to legal mechanisms to tackle environmental issues by introducing new laws and regulations aimed at strengthening environmental protection. Throughout these changes, both China's domestic and foreign environmental policy intentions have been driven by national interest. Specifically, it is worth noting that FYPs and COPs have different characteristics in terms of China's active intervention and development through FYPs, as well as its passive role as a developing country in COPs. Therefore, a review of the relationship between China's domestic policies and its engagement with global environmental governance can be conducted by considering these two factors.

This chapter will also explore how China's domestic environmental policies have evolved before and after the 10th Five-Year Plan, a critical period for the country's economic and social development, and examine the evolution of China's

environmental policy framework, with a focus on the transition from policy level to legalization. Specifically, it will analyze the driving forces behind the policy changes, including the emergence of environmental issues and the enactment of environmental principles.

Furthermore, the chapter will assess the impact of China's domestic environmental policies on its external attitude, particularly in response to the major United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP) meetings. The analysis aims to examine the relationship between China's domestic policies and its engagement with global environmental governance, specifically focusing on its efforts to mitigate and adapt to climate change.

2. Prior to the 10th Five-Year Plan and Kyoto Protocol

China's environmental policy has evolved mainly in response to internal environmental challenges caused by industrialization and economic growth. Priority has been given to internal policy changes over external policy settings, with a focus on sustainable development. Sustainable development was emphasized by China even before joining the Kyoto Protocol, indicating a recognition of the need for long-term approaches to environmental protection. The following sections will discuss key internal policy changes and their impact on China's environmental performance and global environmental governance.

2.1. Emergence of Environmental Interest: 1972–1994

The process of establishing environmental laws and policies in China prior to the 10th Five–Year Plan was gradual. Initially, the environment was not a major concern for national development. However, in 1971, the issue of Three Wastes emerged, drawing attention to the direct impact of pollution on public health and the environment.¹³ To address this issue, the Chinese government established the Environmental Protection Organization in 1972 and published the Environmental Policy 32 Characters in 1973 to guide China's environmental efforts. The 32 Characters were a set of principles that project managers were required to consider when implementing industrial projects.¹⁴ However, due to the lack of a comprehensive policy framework and a system for monitoring compliance, environmental protection was not a primary consideration at that time.

China's first official policy document on environmental protection, the "Several Provisions on Protecting and Improving the Environment," emphasized the need to integrate pollution prevention measures into the design, construction, and operation of industrial facilities.¹⁵ This marked a significant shift towards a more proactive approach to environmental management in China.

¹³ 王瑞玲, & 陈印军, 我国“三废”排放的库兹涅茨曲线特征及其成因的灰色关联度分析, *中国人口·资源与环境*, 15(2) (2005), pp.42–47. “三废”: 废水、废气和固体废弃物.

¹⁴ 中华人民共和国中央人民政府.(2009). “1973年:环境保护开始起步.” www.gov.cn/jrzq/2009-08/30/content_1404821.htm, (accessed date: Feb. 10th 2023), 32 Characters: 全面规划、合理布局、综合利用、化害为利、依靠群众、大家动手、保护环境、造福人民

¹⁵ 解振华, “中国改革开放40年生态环境保护的历史变革——从”, *中国环境管理*, 11(4) (2019), pp. 5–10.

Additionally, the 7th FYP¹⁶, which covered the period from 1986 to 1990, emphasized the "Three Simultaneities" principle, which required that environmental protection, natural disaster prevention, and social infrastructure construction be considered together.¹⁷

China's early environmental policy initiatives, such as the "Environmental Policy 32 Characters" and the "Three Simultaneities" principle, laid the foundation for subsequent policy developments. In 1978, the Constitution was amended to include language on "national-level environmental protection and the prevention of pollution and other environmental hazards."¹⁸ Then, in 1989, China's first comprehensive environmental law, the Environmental Protection Law, was enacted.¹⁹ This law established the legal basis for environmental protection in China, emphasizing the importance of monitoring systems, environmental impact assessments, and cooperation between government and non-governmental entities. With the introduction of this legislation, the Chinese government gained the ability to better manage and monitor environmental protection efforts. However, at this early stage of the legalization process, public awareness of environmental protection was limited, and private sector engagement in environmental protection efforts was relatively low.

In 1982, the Chinese government established the State

¹⁶ 中华人民共和国国家发展和改革委员会, “中共中央关于制定国民经济和社会发展第七个五年计划的建议.”

<https://www.ndrc.gov.cn/fggz/fzzlgh/gjfgzh/200709/P020191029595672223126.pdf>

(accessed date. Feb 10th 2023)

¹⁷ 何文初, 环境法的“污染者负担”原则研究. *长沙电力学院学报: 社会科学版*, 17(1) (2002), pp.39–40, “三同时”原则: 同时设计 `同时施工 `同时投产

¹⁸ “国家保护自然资源环境, 防止污染和其他公害”

¹⁹ 周珂&梁文婷, “中国环境法制建设 30 年”, *环境保护*, (21) (2008), pp.17–19.

Environmental Protection Administration (SEPA) to oversee and coordinate environmental protection efforts at the national level.²⁰ SEPA became the primary agency responsible for environmental protection in China and oversaw a network of environmental protection organizations at the provincial, municipal, and county levels. This transformation involved a series of reforms aimed at strengthening environmental protection efforts at the national level, consolidating the responsibilities of various government agencies, and improving coordination among them.²¹ With the enactment of environmental laws and regulations, governments at all levels were empowered to monitor and enforce environmental protection measures. This signaled a growing recognition of the importance of environmental protection and the need for legal and political support. These organizations played a crucial role in advancing China's environmental policy transformation by providing technical expertise and institutional support for environmental protection initiatives.

As public awareness of environmental issues grew, Polluter pays principle emerged as a key feature of China's environmental policy at the 2nd National Environmental Protection Working Conference in 1983.²² To enforce this principle, a system of monitoring and regulation was necessary, which led to the establishment of the

²⁰ 王玉庆, “中国环境保护政策的历史变迁——4 月 27 日在生态环境部环境与经济政策研究中心第五期 “中国环境战略与政策大讲堂” 上的演讲”, *环境与可持续发展*, 43(4) (2018), pp.5–9.

²¹ 国家统计局, “改革开放 30 年报告之十五: 环境保护事业取得积极进展.” <http://2015.casted.org.cn/web/index.php?ChannelID=14&NewsID=3454> (accessed date. Feb 10th 2023)

²² 罗理恒, 张希栋, & 曹超, “中国环境政策 40 年历史演进及启示”, *环境保护科学*, 48(4) (2022), pp.34–38 “谁污染 谁治理” 和 “强化环境管理”

Environmental Protection Agency (EPA) in China. The EPA was created as a department of The Environmental Protection Committee of the State Council, with the responsibility of organizing projects related to environmental protection and developing regulations and funding channels to address environmental pollution. The EPA has played a crucial role in China's environmental policy transformation by providing a centralized authority for environmental protection and strengthening enforcement efforts to ensure that polluters bear the costs of their activities.²³

Concrete legal measures were taken through the Water Pollution Prevention and Control Law and the Prevention and Control of Atmospheric Pollution Law, which were passed in 1984 and 1989. As environmental protection became gradually included in the national economic and social development plans, in 1988, the State Environmental Protection Administration became an independent directly affiliated institution of the State Council, making the environment a direct responsibility of the government.²⁴

As the roles and responsibilities of environmental protection and management organizations are subdivided and expanded, the system of managing and holding responsibility for environmental pollution in China is also being established.

2.2. Focus on Economic and Industrial Growth over Environmental

²³ Zahar, A, "Implementation of the polluter pays principle in China", *Review of European, Comparative & International Environmental Law*, 27(3) (2018), pp.293–305.

²⁴ 박윤철, "중국의 환경정책 분석", *중국연구* 제 38권(2006), pp.149–163.

Protection: 1994–2000

From the mid-1990s to the late 2000s, the country's interest in environmental protection increased, but economic development remained the primary focus. However, China's accelerated industrialization during this period also intensified environmental problems, highlighting the need for a sense of sustainable development. To address this, the government implemented concrete measures based on the "Three Simultaneities" principle to prevent environmental destruction and strengthen environmental control.²⁵

Adhering to the principle of "Three Simultaneities," it was mandatory for innovative and prospective digging projects, as well as newly constructed, rebuilt, or expanded industrial and mining companies, to integrate infrastructure that ensured the secure production and removal of poisonous and dangerous chemicals. The significance of these facilities should not be undermined, and they ought to be designed, constructed, and utilized concurrently with the primary project.²⁶ In this process, the environmental legal system and environmental administrative permits played a crucial role. The Ministry of Ecology and Environment (MEE) issued judgments concerning the non-acceptance, non-approval, or suspension of approval for 822 projects during the 11th Five-Year Plan period, amounting to an investment of approximately 3.2

²⁵ 中华人民共和国中央人民政府, “环境保护状况,” http://www.gov.cn/guqing/2012-04/10/content_2584066.htm (accessed date: Feb 10th 2023)

²⁶ 育春徐, “关于推进环保 “三同时” 管理及验收工作的几点探索”, *现代经济管理*, 2(4) (2021), p. 78–80.

trillion yuan.²⁷

China's Agenda 21 program, which was implemented in 1995, promoted the need of sustainable development.²⁸ China recognized that as a country with a large population and limited resources, it needed a strategy based on sustainable development. China's early emphasis on sustainable development, prior to the adoption of the Kyoto Protocol, is evidence of the country's commitment to prioritizing its domestic environment. This focus on sustainable development was reflected in China's policies and practices well before it joined the Kyoto Protocol.

The Chinese government upgraded the SEPA from a direct agency of the State Council to a ministerial-level organization in 1998. This change clarified environmental protection as a goal of national policy and expanded the agency's scope of responsibilities. Environmental protection departments at various levels were directed to adopt optimal technologies for national environmental protection in matters such as construction and environmental impact assessment.²⁹ The upgraded Ministry of Environment in China reflected the growing importance of environmental protection as a major field in the country's development direction. China's participation in international efforts, such as joining the Kyoto Protocol in May 1998, further highlighted its commitment to

²⁷ 全国人民代表大会, “我国环境法律制度和环境保护若干问题,” <http://www.npc.gov.cn/npc/c541/201211/63ba26f719454bfla673ac1762850c85.shtml> (accessed date: March 5th 2023)

²⁸ 国家环境保护局 编. 1995. 《中国环境保护21世纪议程》. 中国环境科学出版社, 欧阳志远. (2004). 论节约型经济系统——《中国 21 世纪议程》实施的理论反思. *中国人民大学学报*, (3), pp.106–113.

²⁹ 中华人民共和国生态部, “关于印发1998年国家环境保护最佳实用技术推广计划项目的通知,” https://www.mee.gov.cn/gkml/zj/wj/200910/t20091022_171897.htm (accessed date, Feb 10th 2023)

protecting the environment.

2.3. The Kyoto Protocol (COP3) and China' s Response

2.3.1. The Kyoto Protocol (COP3), 1997

The Kyoto Protocol aimed to stabilize atmospheric concentrations of greenhouse gases at a level that would prevent "dangerous anthropogenic interference" with the climate system. The protocol bound developed countries to collectively reduce their emissions by an average of 5% below 1990 levels. These countries, referred to as Annex I parties under the UNFCCC, had varying national targets for achieving these reductions.³⁰

The Kyoto Protocol introduced several mechanisms to facilitate emissions reductions, including the Clean Development Mechanism(CDM), Joint Implementation, and Emissions Trading. The CDM recognizes greenhouse gas reductions achieved through investments in developing countries as emissions reductions in developed countries. The Joint Implementation mechanism recognized emissions reductions achieved through investments between developed countries. The Emissions Trading mechanism allowed developed countries to trade emission quotas to meet their reduction obligations in the international market.³¹ However, the

³⁰ Böhringer, C, "The Kyoto protocol: a review and perspectives," *Oxford Review of Economic Policy* 19(3) (2003), pp. 451–466.

³¹ UNFCCC, "The Kyoto Protocol," https://unfccc.int/kyoto_protocol (accessed date: Feb 12th 2023)

Kyoto Protocol's focus on obligations for developed countries had limitations, including the fact that it does not include emissions reduction targets for developing countries.

2.3.2. China and the Kyoto Protocol

China ratified the Kyoto Protocol in 2002, indicating its formal commitment to the agreement. However, China has not adopted a proactive stance in establishing stringent emission reduction targets. Despite internal programs to safeguard the environment and promote social harmony, China has opted for a more flexible strategy to uphold its international commitments.³² When the Chinese Premier Zhu Rongji approved the Kyoto Protocol, China's Foreign Ministry stated that the approval demonstrated China's support for global environmental cooperation and sustainable development. The ministry referred to the UNFCCC and the Kyoto Protocol as providing fundamental principles, a practical framework, and guidelines for international cooperation in combating climate change.³³

However, China has emphasized economic development as a top priority rather than environmental protection, which suggests that

³² Lichao He, *China's Climate-Change Policy from Kyoto to Copenhagen: Domestic Needs and International Aspirations*. Asian Perspective, Volume 34, Number 3, (2010), pp. 5–33

³³ 中华人民共和国外交部, "Premier Zhu Rongji of the State Council of the People's Republic of China Announced China's Approval of the Kyoto Protocol," https://www.fmprc.gov.cn/mfa_eng/wjb_663304/zzjg_663340/gjs_665170/gjzzyhy_665174/2594_665176/2603_665194/200209/t20020917_598361.html (accessed date: Feb 10th 2023)

the environment was not a high priority. While China's participation in the Kyoto Protocol was significant, the country did not propose specific solutions or show active participation in external environmental protection measures. Moreover, the environmental principles discussed in the

UNFCCC and Kyoto Protocol were already basic principles of China's internal environmental policy, so there was no significant change in foreign policy. China withdrew from the Kyoto Protocol in 2011, citing the reason that developing countries were not primarily responsible for greenhouse gas emissions during the industrialization period, which was the cause of today's climate change.

The Kyoto Protocol only binds developed countries, so the EU pledged under the Kyoto Protocol to cut its greenhouse gas emissions by 8% during the initial commitment period, which ran from 2008 to 2012. A legally binding burden-sharing agreement, which establishes distinct emissions objectives for each Member State, allocates this target among the Member States. At that time, China was a country undergoing significant growth but had limited influence in the international community. Consequently, there seemed to be no compelling reason for China to adhere to the obligations typically expected of developed countries, such as the United States and the EU. Moreover, imposing these obligations on China could hinder its industrial development. Therefore, by refraining from assuming the obligations assigned to developed

nations and embracing its status as a developing country, China aimed to prioritize its national interest.

3. The 10th Five–Year Plan and COP7

3.1. The 10th Five–Year Plan (2001–2005)

In the 10th Five–Year Plan (2001–2005), environmental protection was established as a national goal for economic and social development and as a core element in improving people's standard of living. As a result, sustainable development was initiated alongside economic growth. The promotion of environmental protection was based on the adjustment of the economic structure and the comprehensive expansion of national power. China took an active approach to internal environmental policies during this time by promoting sustainable development and science education strategies. However, economic development cannot come at the expense of environmental protection; instead, economic growth must be achieved while protecting the environment.

Jiang Zemin's "Three Represents" idea guided sustainable development during this period, emphasizing the implementation of key environmental pollution prevention measures.³⁴ The plan aimed to reduce emissions of major pollutants, including sulfur dioxide,

³⁴ Zemin, J, "*Research on energy issues in China*", Academic Press (2009).

industrial dust, nitrogen ammonia, and industrial solid waste, by 10% compared to 2000. It also aimed to reduce sulfur dioxide emissions in acid rain-regulated areas and sulfur gas-regulated areas by 20% compared to 2000, as well as to reduce the concentration of acid in rain to prevent water pollution and curb urban groundwater pollution. The plan recognized the importance of addressing the origin of pollution, which is industrial production.³⁵

Moreover, in the 10th FYP, environmental protection became the goal of national economic and social development, with a focus on pursuing sustainable development along with economic growth to improve people's standard of living. To review the effects of environmental policies, China established pilot cities. These attempts reflected an attitude of trying out environmental policies on a trial basis and applying them to other regions based on the results. There was a differentiated policy application for rural areas and the establishment of a model city for national environmental protection, by dividing urban and rural areas. Environmental rules, standards, and impact assessments are strengthened to create better environmental-related scientific research conditions and monitoring measures. Protection measures were taken for ecological protection zones, and the construction and management capabilities of nature protection zones and ecological demonstration zones are strengthened.³⁶ China sought to provide unified oversight

³⁵ 中华人民共和国中央人民政府, “中华人民共和国国民经济和社会发展第十个五年计划纲要,” http://www.gov.cn/gongbao/content/2001/content_60699.htm (accessed date: Feb 13th 2023)

³⁶ 환경부, “중국 환경부문 제10차 5개년 계획,” (2002), 환경부 해외협력(담).

and administration for environmental protection under the 10th Five-Year Plan and greatly bolster its capacity for law enforcement.

During this time, China insisted on developing countries' status in the Kyoto Protocol, demanding that advanced countries comply with carbon reduction obligations to protect the environment, and emphasizing that developing countries' status has nothing to do with related obligations. Additionally, China demanded technology transfer from developed countries and was not affected by external factors in responding to climate change.

3.2. The Marrakech Accords: China as a Mouthpiece for Developing Countries' Interests

3.2.1. The Marrakech Accords (COP7), 2001

The Marrakech Accords were significant as they represent the implementation of the Kyoto Protocol. The Kyoto Protocol outlined the obligations of member states within the framework of the Climate Change Convention, while the Marrakech Agreement established specific definitions and rules for carrying out these obligations. This included the embodiment of international emission trading, Clean Development Mechanism (CDM), and operating rules for joint implementation. At the Marrakech Conference, the three systems of the Kyoto Protocol, namely reference procedures, carbon conversion, and the issue of compliance, were collectively

concluded and referred to as the Marrakech Declaration.³⁷

3.2.2. China as a Spokesman for Developing Countries

During this period, the carbon exchange rate system was flexibly applied to developing countries, including China, which played a leading role in the adoption of the Marrakesh Agreement among UNFCCC member countries. As a member of the Group of 77 plus China Alliance, China actively participated in the drafting and negotiation of the Ministerial Declaration, which recognized the need for addressing climate change and biodiversity. China also opposed attempts by some advanced countries to impose obligations on developing countries.³⁸ At COP7, China represented the interests of developing countries and emphasized the importance of technology transfer and reduction obligations for advanced countries.³⁹ However, China did not make voluntary commitments to reduce carbon emissions and continued to prioritize internal environmental policies rather than implementing China-led environmental protection policies in the international community.

The decisions made at COP7 have led to the establishment of three new funds for developing nations, two operating under the FCCC and one under the Kyoto Protocol. One of these funds, known as the 'special climate change fund,' aims to supplement GEF financing by

³⁷ UNFCCC, "The Marrakesh Ministerial Declaration," <https://unfccc.int/process-and-meetings/conferences/past-conferences/marrakech-climate-change-conference-october-2001/decisions-marrakech-climate-change-conference-october-2001> (accessed date: Feb 12th 2023)

³⁸ 国家气候变化对策协调小组办公室, "《公约》第七次缔约方会议(COP7)与《马拉喀什协定》," <https://www.ccchina.org.cn/Detail.aspx?newsId=29515> (accessed date: Feb 14th 2023)

³⁹ Dessai, S., & Schipper, E. L., "The Marrakech Accords to the Kyoto Protocol: analysis and future prospects," *Global environmental change* 13(2) (2003), pp.149–153.

providing funds for adaptation, technological transfer, and greenhouse gas mitigation. The Kyoto Protocol adaptation fund will be financed through voluntary donations and a 2% share of the proceeds from certified emission reductions generated by the Kyoto Protocol's CDM. In Bonn, the EU, Canada, New Zealand, Iceland, Switzerland, and Norway signed a non-political commitment to contribute 450 million Euros annually to the fund by 2005, with the contribution level subject to review in 2008.⁴⁰ If China were to participate as a developed country, it would face challenges in raising additional funds and obtaining technology from advanced nations. This situation would put China at a disadvantage, considering its efforts to adopt eco-friendly technology in alignment with the 'Three Presents' initiative. Hence, China's participation in the international arena while maintaining its developing country status can be seen as a strategic approach.

After COP7, China's stance at the Buenos Aires Climate Change Conference (COP10) remained consistent with its existing posture. While acknowledging the importance of global cooperation in addressing climate change, China reiterated its position that developed countries should take the lead in reducing greenhouse gas emissions, providing financial support and technology transfer to developing countries, and fulfilling their obligations under the Kyoto Protocol.

⁴⁰ Ott, H. (2002). Climate policy after the Marrakesh Accords: From legislation to implementation. *Wuppertal Institute for Climate, Environmental and Energy*, Wuppertal. pp.9–10

4. The 11th Five–Year Plan and COP15

4.1. The 11th Five–Year Plan (2006–2010)

In 2006, China's leaders began prioritizing environmental protection as a crucial component of the country's growth strategy. Premier Wen Jiabao presented the "Three Shifts" strategy at the National Environmental Protection Conference that year, which aimed to transition towards a more sustainable economic model.⁴¹ The strategy called for shifts towards a circular economy, sustainable consumption and production patterns, and a low–carbon economy. This represented a significant change in China's approach to economic and industrial development, reflecting a growing recognition of the importance of environmental protection and sustainable development in China's growth strategy.⁴² The strategy recognized the central importance of industrialization in economic development and emphasized the need to consider environmental factors to ensure the quality of economic growth.

While the 11th Five–Year Plan was similar to its predecessor, the 10th Five–Year Plan, which focused primarily on industrialization with little emphasis on environmental protection, it aimed to set objectives, investments, and policy measures for environmental protection over a five–year period. Specifically, it identified responsibilities and tasks for government and environmental

⁴¹ 中华人民共和国中央人民政府, “温家宝在第六次全国环境保护大会上强调 全面落实科学发展观 加快建设环境友好型社会,” http://www.gov.cn/node_11140/2006-04/22/content_261055.htm (accessed date. Feb 10th 2023)

⁴² Fan, C. C., “China's eleventh five–year plan (2006–2010): from "getting rich first" to "common prosperity," *Eurasian geography and economics*, 47(6), (2006), 708–723.

protection departments at all levels, encouraged participation from companies and civil society, and aimed to promote the development of an eco-friendly society.

China's approach to addressing climate change has been influenced by the growing importance of environmental protection issues, including droughts and floods caused by climate change. While China has relied on external support for its efforts, its "Policies and Actions for Addressing Climate Change"⁴³ released in 2008 support the principle of "Common But Differentiated Responsibility (CBDR)," which emphasizes the carbon reduction obligations of advanced countries and prioritizes economic development for developing countries. This reflects a broader trend in China's approach to balancing economic development with environmental protection.

4.2. China's Active Participation in the Copenhagen Accord

4.2.1. The Copenhagen Accord (COP15), 2009

At COP 15 in Copenhagen, the Copenhagen Accord was signed, which aimed to enhance measures and international cooperation for adaptation and mitigation purposes. The Accord required advanced economies to commit to overall emissions targets for 2020, while developing countries were expected to implement mitigation measures to slow carbon emissions growth and report on their

⁴³ Information Office of the State Council of the People's Republic of China, "China's Policies and Actions for Addressing Climate Change," http://zw.china-embassy.gov.cn/eng/zgj/202112/t20211216_10470556.htm (accessed date: Feb 10th 2023)

progress biennially through the United Nations Office on Climate Change.

In addition, the Copenhagen Accord attempted to establish procedures for lowering carbon emissions brought on by deforestation and to mobilize financial resources from wealthier nations to aid mitigation efforts in poor nations. To this end, the agreement created the Copenhagen Green Climate Fund, which operates as a financial mechanism for funding mitigation projects, programs, policies, and other activities in developing countries. The agreement also established technology mechanisms to accelerate technology development and transfer, with a state-led approach. Member states were called on to implement the accord by 2015, including considering strengthening their long-term goals, such as limiting temperature increases to 1.5 degrees Celsius.⁴⁴

4.2.2. Full-fledged Start of China's Change

Prior to the commencement of the Copenhagen Accord, there was a shift in China's attitude. Zou Ji expressed that future frameworks related to climate change response should adhere to the principle of "Common But Differentiated Responsibilities (CBDR)" as outlined by the Convention. This indicated China's willingness to participate while emphasizing that its approach should differ from that of advanced countries, considering China's status as a developing nation. Meanwhile, Su Wei, the deputy head of the Chinese

⁴⁴ UNFCCC, "Copenhagen Accord," <https://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf#page=4> (accessed date: Feb 14th 2023)

delegation, stated that the use of quantitative indicators is expected to hinder future negotiations due to limitations not reflected in the Bali roadmap, as well as differences between developed and developing countries regarding quantitative easing indicators.⁴⁵

In 2008, China released a policy declaration titled "China's Policies and Actions for Addressing Climate Change," which underscored the concept of "common but differentiated responsibility (CBDR)."⁴⁶ The document emphasizes the carbon reduction obligations of developed countries while prioritizing economic development for developing countries, indicating China's support for this principle. As a component of the State Council, the State Environmental Protection Administration was transformed into the Ministry of Environmental Protection. Subsequently, in 2018, the Ministry of Ecology and Environment was officially established.⁴⁷ China has been developing its own internal environmental legislation and regulations, while the international community has not placed significant burden on it to do so.

Initially, China was considered as a potential obstacle in international climate conferences⁴⁸ due to the likelihood of opposing

⁴⁵ 周宇, “巴厘岛路线图: 拯救地球的路标?,” <https://news.sina.com.cn/w/2008-01-17/120214765588.shtml> (accessed date: Feb 14th 2023)

⁴⁶ Information Office of the State Council of the People's Republic of China, “China's Policies and Actions for Addressing Climate Change,” http://zw.china-embassy.gov.cn/eng/zgj/202112/t20211216_10470556.htm (accessed date: Feb 10th 2023)

⁴⁷ 中华人民共和国生态部, “History of MEE,” http://english.mee.gov.cn/About_MEE/History/ (accessed date: Feb 10th 2023)

⁴⁸ Du Xiaodan, “UN climate conference faces four obstacles: Chinese official,” <http://english.cctv.com/20091208/103504.shtml> (accessed date: Feb 15th 2023)

policies proposed by developed countries.⁴⁹ China surprised the international society by actively participating in the preparation process for the COP15 Copenhagen Conference. China pledged to reduce the ratio of CO₂ to unit GDP by 40 to 45% by 2020 as part of its action target to control greenhouse gas emissions.⁵⁰ By announcing specific goals, China began to take a more cooperative attitude towards global environmental governance and became an active participant in addressing climate change.⁵¹ However, the Copenhagen Accord was criticized for not having legally binding commitments.⁵² This is because the agreements jointly developed by the United States and BASIC countries (China, South Africa, India, and Brazil) were not legally binding, and countries were not obligated to ratify the subsequent Kyoto Protocol, which was completed in 2012.⁵³ Therefore, China expressed willingness to act, it was cautious in committing to binding emission caps or specific timelines for peak emissions.⁵⁴

"Climate change is a major issue that concerns the international community," the Chinese Ministry of Foreign Affairs declared,

⁴⁹ Conrad, B, China in Copenhagen: Reconciling the "Beijing climate revolution" and the "Copenhagen climate obstinacy", *The China Quarterly*, 210, (2012), pp.435–455.

⁵⁰ Xinhua News Agency, "China announces targets on carbon dioxide emission cuts (中国首次宣布温室气体减排清晰量化目标)," http://www.chinadaily.com.cn/dfpd/2009-11/27/content_9061975.htm.

⁵¹ Xinhua News Agency, "China urges developed nations to cut emissions by 40% by 2020" http://www.china.org.cn/international/2009-05/22/content_17817009.htm (accessed date: Feb 15th 2023)

⁵² Wynn, Gerard, "What was agreed and left unfinished in U.N. climate deal," <https://www.reuters.com/article/us-climate-copenhagen-issues-idUSTRE5BJOX520091220> (accessed date: Feb 14th 2023)

⁵³ UNFCCC, "The Copenhagen Accord, 2/CP.15," <https://unfccc.int/resource/docs/2009/cop15/eng/107.pdf> (accessed date: Feb 14th 2023)

⁵⁴ Li Huizi, Yuan Ye, "China legislature deliberates a draft resolution on climate change," http://www.npc.gov.cn/zgrdw/englishnpc/Special/CombatingClimateChange/2009-08/28/content_1516247.htm (accessed date: Feb 15th 2023)

underlining China's active involvement in international cooperation to solve the problem.⁵⁵ This demonstrated China's positive attitude towards fulfilling environmental protection obligations under the Kyoto Protocol. However, China continued to emphasize the need for developed countries to make significant emissions reduction pledges, while developing countries should be allowed to fulfill their international obligations with less stringent reduction commitments and greater flexibility domestically.⁵⁶

He Yafei, a senior Chinese diplomat, expressed his opinion that although the Copenhagen Accord reached at COP15 is a "global solution" based on consensus, it is less realistic or practical compared to China's concept of a harmonious world. Despite this, China remains committed to the principle of "harmony in diversity," which emphasizes harmony in international relations without necessarily embracing democratic styles.⁵⁷ Although this period marked the beginning of China's active participation in global environmental governance, its influence cannot be solely attributed to this, as it also leverages advantages from China's internal development and continues to stress the responsibilities of developed countries.

At the Copenhagen conference, it was in China's national interest to maintain its developing country status. Due to the ambiguity of the Copenhagen Accord, the parties to the Accord agreed to reduce

⁵⁵ Anup Shah, "COP15–Copenhagen Climate," <https://www.globalissues.org/article/784/cop15-copenhagen-climate-conference> (accessed date: Feb 15th 2023)

⁵⁶ 国家发展改革委员会, "中国应对气候变化的政策与行动2009年度报告," (2009)

⁵⁷ Yafei, H, *China's Historical Choice in Global Governance*, (Routledge, 2017)

global emissions in order to limit the global temperature increase to below 2 degrees Celsius, which was less ambitious than the desired 1.5 degrees Celsius. However, the data likely to have been included in the Accord's Appendices may not have met this 2-degree target. Annex I parties committed to submitting quantified economy-wide emissions targets for 2020 by January 31, 2010, following the format provided in Appendix I of the Accord. Developed countries were to measure, report, and verify the delivery of reductions and financing in accordance with existing and future COP guidelines to ensure rigorous, robust, and transparent accounting of targets and finance.

This perhaps provided a useful start by way of setting up a non-binding "depository" for the US's emission reduction target. However, this target was not legally binding and was not subject to an international compliance mechanism like a target under the Kyoto Protocol. In particular, as the 11th Five-Year Plan emphasized sustainable economic development, there was an expectation of an acceleration in energy consumption. It was advantageous for China to maintain its status as a developing country within the international community because fulfilling mitigation obligations as a developed country could potentially conflict with the goals of the 11th Five-Year Plan.

5. The 12th Five-Year Plan and COP17

5.1. The 12th Five-Year Plan (2011–2015)

The 12th Five-Year Plan (2011–2015) represented a shift away from the previous emphasis on achieving economic growth targets at the expense of environmental concerns. Instead, the plan aimed for qualitative growth while pursuing economic development, with a focus on environmental science and technology and regulations on environmental protection.

One of the key priorities of the 12th FYP was the research and development of pollution control technology to achieve environmental protection goals related to pollution emissions. The plan aimed to identify technology demands and develop technologies accordingly, improving environmental protection management and problem-solving abilities. Additionally, the plan included efforts to evaluate the environmental impacts of low-carbon economic development and research green economic development measures in response to pressure to reduce carbon emissions through international cooperation. Although China published domestic carbon emission statistics in response to external pressure, there were still limitations due to differences between statistical subjects.⁵⁸

The plan set specific targets for protecting the environment, including a significant reduction of pollutants, visible improvement of drinking water quality, and control of harmful substances by 2015.⁵⁹ To support these targets, the government announced 'the

⁵⁸ Hu, A. G, "The Five Year Plan: A new tool for energy saving and emissions reduction in China," *Advances in Climate Change Research*, 7(4), (2016), pp.222–228.

⁵⁹ 温家宝, 政府工作报告, 人民日报, 3(16), 1, (2010)

State Council's Decision on Accelerating the Culture and Development of Strategic Emerging Industry' in 2010, promising financial support, tax benefits, and investment and financing for seven emerging strategic industries focused on environmental protection.⁶⁰ These industries included energy-saving, new generation IT, bio, high-end equipment manufacturing, new energy, new materials, and new energy automobiles.⁶¹

In terms of environmental policy, China proposed to strengthen major environmental protection activities and set limits on projects that may negatively impact the environment through project approval. Additionally, the government enacted environmental protection regulations, such as the Yangtze River Protection Act. The Resolution of the 18th National Congress of the Communist Party of China in 2012 set strict standards in environmental legislation and strengthened sanctions against environmental violations.⁶² The resolution also called for integration and sustainable development across all aspects, including the economy, politics, culture, and society, to strengthen the construction of an ecological civilization system. Because the call for integration and sustainable development in all aspects, including the economy, politics, culture, and society, was made to strengthen the construction of an ecological civilization system. This approach

⁶⁰ 中华人民共和国中央人民政府, “国务院关于加强培育和发展战略性新兴产业的决,” http://www.gov.cn/jwqk/2010-10/18/content_1724848.htm (accessed date: Feb 13th 2023)

⁶¹ 中华人民共和国生态部, “The National Eleventh Five-year Plan for Environmental Protection (2006–2010),” https://english.mee.gov.cn/Resources/Plans/National_Fiveyear_Plan/200803/t20080305_119001.shtml (accessed date: Feb 13th 2023)

⁶² 共产党员网, “胡锦涛在中国共产党第十八次全国代表大会上的报,” https://www.12371.cn/2012/11/17/ARTI1353154601465336_8.shtml (accessed date: Feb 10th 2023)

emphasizes the importance of balancing economic development with environmental protection and promoting sustainable practices in all areas of society.

However, there had been a growing need to update environmental protection laws to address modern environmental challenges, such as smog and soil pollution. The implementation of the Environmental Protection Law had revealed the need for revisions to better protect the environment. As a result, the Environmental Protection Law was revised in 2014 after approval by the National People's Congress.⁶³ The environmental sector became a major area of focus in Chinese policymaking, recognizing the need to consider all aspects of the environment, including air, soil, oceans, and forests, and prioritize environmental protection alongside industrial development.

5.2. The Durban Platform for Enhanced Action (COP17) and China' s Engagement

5.2.1. The Durban Platform (COP17), 2011

The COP17 of 2011 resulted in several key agreements, including the Durban Platform, Finance, Measurement, Reporting and Verification for the enhanced measures of the Kyoto Protocol.⁶⁴ At the conference, developed countries committed to formalizing

⁶³ 全国人民代表大会, “关于《中华人民共和国环境保护法修正案(草案)》的说明,” http://www.npc.gov.cn/zgrdw/wxzl/gongbao/2014-06/23/content_1879667.htm (accessed date. Feb 10th 2023)

⁶⁴ UNFCCC, “COP17, 1/CMP.7,” <https://unfccc.int/resource/docs/2011/cmp7/eng/10a01.pdf> (accessed date: Feb 15th 2023)

the second commitment period of the Kyoto Protocol the following year. The conference also passed a resolution to convert commitments made under previous agreements into legally enforceable emission targets, update the regulations on emissions accounting, and include nitrogen trifluoride in the gas list.

In addition, the conference established a Green Climate Fund to assist developing countries in mitigating and adapting to climate change. It also created a standing committee to evaluate climate financial flows and advise on guidelines for UNFCCC funds. Biennial reports from developed and developing countries included lists of greenhouse gas emissions, mitigation strategies, and support provided or received.⁶⁵ The conference agreed to raise up to \$100 billion by 2020 for the Green Climate Fund, encouraging the active participation of poor and developing countries in solving the global warming problem.⁶⁶

5.2.2. China' s Engagement in Developing Countries

China has consistently emphasized the responsibility of developed countries at the Convention on Climate Change, rather than imposing obligations on developing countries. During the Durban Conference, Chinese delegate Su Wei highlighted the importance of implementing the Bali Roadmap and expressed a cooperative mindset to resolve various issues, including a legally

⁶⁵ UNFCCC, "COP17 Durban," <https://www.c2es.org/content/cop-17-durban/> (accessed date: Feb 15th 2023)

⁶⁶ UNFCCC, "Launching the Green Climate Fund (3/CP.17)," <https://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf> (accessed date: Feb 15th 2023)

binding agreement.⁶⁷ China played a crucial role in the establishment of the Green Climate Fund and a standing committee to evaluate climate financial flows, which helped provide financial assistance to developing countries for climate mitigation and adaptation.

However, Xie Zhenhua expressed concerns regarding the Durban Agreement, as it postponed the decision on further emissions reductions and failed to change the 2020 emissions outlook. He also stated that developed countries are not doing enough to reduce emissions.⁶⁸ While China intended to participate constructively in the Durban platform negotiations, it did not commit to implementing more active emission reduction measures. China agreed to adopt the content of the Durban conference but also warned that unrealistic emissions reduction targets and unfair burden-sharing mechanisms for developing countries could have hindered negotiations and undermined international cooperation in tackling climate change.⁶⁹

If China had been a developed country within the Durban platform, the obligations of the Kyoto Protocol would have been extended, as promised by the EU, and a continuous effort to reduce carbon emissions would have been required. Alternatively, in collaboration with the United States, China could have advocated for a reduction in obligations for developed countries. China consistently

⁶⁷ Xinhua News Agency, "Stick to Bali roadmap, says Chinese top climate negotiator," http://zw.china-embassy.gov.cn/eng/xwdt/201106/t20110621_6420227.htm (accessed date: Feb 15th 2023)

⁶⁸ Patrick Schroeder, "Durban outcomes significant milestone," http://www.chinadaily.com.cn/world/2011climate/2011-12/15/content_14271603.htm (accessed date: Feb 15th 2023)

⁶⁹ Stern, N., Bowen, A., & Whalley, J, *The global development of policy regimes to combat climate change*, (Singapore: World Scientific, 2014)

maintained its stance that developed countries, driven by their national interests, bear the primary responsibility for addressing climate change. China emphasized the significance of providing continued funding, technology transfer, and capacity-building support to developing countries. Within the group of BASIC countries (Brazil, South Africa, China, and India), China expressed its willingness to accept formal obligations only after 2020. In the short term, China indicated its reluctance to fulfill immediate reduction obligations. The Durban conference underscored the importance of implementing specific measures within this context.⁷⁰

6. The 13th Five-Year Plan and COP21

6.1. The 13th Five-Year Plan (2016–2020)

Environmental protection was integrated into the economic development and foreign policy of the Xi Jinping administration, as exemplified by initiatives such as the Belt and Road Initiative. This integration indicated a growing recognition of the importance of environmental sustainability in China's long-term economic and social development. The concept of achieving ecological civilization through the Green Belt and Road became a major focus globally, highlighting the need to equally value the environment in the economic sphere. This signified a shift towards more sustainable development practices that prioritized environmental protection and

⁷⁰ 国家发展改革委员会, “中国应对气候变化的政策与行动2011年度报告,” (2011)

conservation alongside economic growth. By embracing the Green Belt and Road, China took steps toward achieving its environmental and social objectives while promoting global environmental governance.

The 13th FYP aimed to build a Xiaokang society and continues to prioritize environmental protection and the development of science and technology. The plan included green finance, pollution and carbon emission distribution systems, and strengthening environmental governance systems for strict environmental protection. The overall improvement of the ecological environment included raising the level of green and low carbon, developing energy resources, improving utilization efficiency, controlling carbon emissions, and basic ecological safety protection networks.⁷¹ By promoting the green development ideology, China sought to foster joint cooperation between the government, private sector, and civil society to achieve its environmental protection goals. This approach represented a significant shift in the country's environmental policy towards more sustainable and inclusive development.⁷²

Furthermore, the execution of China's external environmental policy was underscored by the commercialization of the term 'global,' indicating a shift in China's stance toward climate change. This change in attitude suggested an increasing recognition by

⁷¹ Gosens, J., Käberger, T., & Wang, Y, China's next renewable energy revolution: goals and mechanisms in the 13th Five Year Plan for energy. *Energy Science & Engineering*, 5(3), (2017), pp.141–155.

⁷² 양평섭&박민숙, “중국 13 차 5 개년 계획의 주요 내용과 시사점,” *[KIEP] 오늘의 세계경제*, 2015(11), (2015)

China of its international responsibilities and obligations towards the environment. China's open strategy aimed to enhance its influence in global diplomacy while addressing climate change, aligning with its larger strategic vision, such as the 'Chinese Dream.'⁷³ While environmental protection remained an important policy goal, China's environmental policies were also driven by a sense of responsibility towards the international community, rather than solely a desire for global leadership and influence.

6.2. The Paris Agreement and China' s Key Role as a Negotiator

6.2.1. The Paris Agreement (COP21), 2015

The Paris Agreement pursued efforts to restrict the increase to 1.5° C and sought to keep the rise in the average global temperature to well below 2° C. Despite the fact that seven nations (Iran, Eritrea, Turkey, South Sudan, Iraq, Libya, and Yemen) had not yet signed the deal owing to ongoing wars, all other signatories, especially developing nations, were devoted to cutting their carbon emissions. All parties to the agreement were expected to submit National Determined Contributions (NDCs), which were five-year plans defining each party's approach to tackling climate change and achieving emission reduction goals.⁷⁴

⁷³ 유희복, “중국 경제의 진화: 국가발전에서 글로벌 거버넌스 변화의 도구로,” *아태연구*, 26(2), (2019), pp. 49–95.

⁷⁴ UNFCCC, “The Paris Agreement,” <https://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf#page=2> (accessed date: Feb 15th 2023)

6.2.2. China's Engagement and Negotiation

China played an active role in the Paris Agreement and aimed to provide leadership in the negotiations. While it participated as a representative country of developing nations in 2009, in 2015, it played a leading role in the overall participation of member countries, highlighting China's increasing willingness to take on a greater role. This is in contrast to the decision made by the United States to withdraw from the Paris Agreement after President Trump's election. China has committed to implementing the carbon emission reduction report and has declared its intention to achieve a peak year for greenhouse gas emissions before 2030 and carbon neutrality by 2060. However, it still maintains its status as a developing nation.⁷⁵

China's position on climate change at COP21 was focused on global cooperation and concerted efforts to combat climate change. The Chinese government incorporated many eco-friendly elements into its new FYP, allowing for the successful coordination of policies and initiatives to transform China into a green economy. In order to promote low-carbon energy use, the Chinese government also implemented incentives and measures to reduce resource consumption. However, to create significant demand for ethical production and consumption, the Chinese must continue to develop environmental awareness and expertise.⁷⁶

⁷⁵ Xinhua News Agency, "Xi Focus: Xi announces China aims to achieve carbon neutrality before 2060." http://www.xinhuanet.com/english/2020-09/23/c_139388764.htm (accessed date: Feb 15th 2023)

⁷⁶ Thorsten Jelinek, "China's green development plan,"

China's active participation in responding to climate change was evident in the Paris Agreement, as the country focuses on accelerating environmental protection and eco-friendly technology development both domestically and abroad. In line with its commitment to reducing greenhouse gas emissions, China also pledged not to fund coal projects and established the South-South Joint Fund with \$6 million in funding.⁷⁷ Additionally, China developed a Green Finance Guideline for the China Pakistan Economic Corridor (CPEC) and set up an International Institute of Green Finance, demonstrating its efforts to promote sustainable development. However, there were limitations to China's environmental efforts. While China had made progress in promoting green finance and limiting funding for coal projects, there was still a heavy reliance on coal in factories for energy development in Southeast Asia and loans for the Belt and Road Initiative.⁷⁸ China's domestic environmental policy is often prioritized independently of international agreements, and there is a perception that China's environmental efforts are mainly for show on the global stage. Nonetheless, China's commitment to the Paris Agreement is a positive step towards addressing climate change.

With the Paris Agreement also having obligated China to reduce its emissions, it implied that sustainable development at the environmental level should be maintained, alongside economic

https://www.sohu.com/a/87104602_201559 (accessed date: Feb 15th 2023)

⁷⁷ 国家发展改革委员会, “中国应对气候变化的政策与行动2015年度报告,” (2015)

⁷⁸ Chen, H, “Greener power projects for the Belt & Road Initiative (BRI),” *National Resources Defence Council*, 22, (2019).

development, for all citizens to enjoy a comfortable and abundant life in China's Xiaokang society. The national goal gave China an attitude of acceptance in fulfilling its reduction obligations. Nevertheless, it differed from developed countries. Like the existing Kyoto Protocol, developed countries tended to submit NDCs focused on greenhouse gas reduction, but many developing countries tended to include six key factors such as mitigation, adaptation, and finance of the Paris Agreement. This served as the basis for developing countries to receive support from developed countries. Developed countries were also obligated to provide financial support when submitting the data.⁷⁹

Countries that were not developed countries could voluntarily provide financial support. China was in a position to receive financial support as a developing country. However, after the withdrawal of the United States, China announced not only active participation but also expanded financial support for the implementation of the Paris Agreement.⁸⁰ This influenced the formation of China's image. Despite its status as a developing country, it participated, unlike the United States, in helping to improve China's diplomatic power. Therefore, it was advantageous for China to participate in international environmental governance while maintaining its status as a developing country rather than as a

⁷⁹ Agreement, P. (2015, December). Paris agreement. In Report of the Conference of the Parties to the United Nations Framework Convention on Climate Change (21st Session, 2015: Paris). Retrived December (Vol. 4, p. 2017). HeinOnline.

⁸⁰ Zhang, H. B., Dai, H. C., Lai, H. X., & Wang, W. T. (2017). US withdrawal from the Paris Agreement: Reasons, impacts, and China's response. *Advances in Climate Change Research*, 8(4), 220–225.

developed country.

7. The 14th Five-Year Plan and COP 27

7.1. The 14th Five-Year Plan (2021–2025)

The 14th Five-Year Plan was developed during the 13th stage of socialist development, with the goal of building a fully modernized socialist state by 2049, the 100th anniversary of the establishment of New China. One of the key focuses of this plan is on the environment and resources, aiming to create a wide range of green lifestyles and build a beautiful China.

To achieve this, the 14th Five-Year Plan placed emphasis on transitioning to green growth for sustainable economic development, creating new growth engines, and establishing a nationwide carbon emission trading market. The MEE announced plans to expand the carbon emission trading market nationwide, enacting "Interim regulations for the Administration of Carbon Emissions Trading" and upgrading them to "Measures for the Administration of Carbon Emissions Trading", as well as implementing "the Rules for the Registration of Carbon Emissions".⁸¹ China's attempt to introduce a carbon emission trading system (ETS) began in 2011 and was later implemented in Shanghai and Beijing in 2015. Starting with Shenzhen in 2013, the system is now being expanded. By standardizing the price unit, minimum transaction declaration

⁸¹ 中国环境新闻, “生态环境部召开10月例行新闻发布会,” https://www.thepaper.cn/newsDetail_forward_9761482 (accessed date. Feb 13th 2023)

amount, and carbon emission quota of carbon emission rights, China is showing its willingness to actively participate in carbon emission trading.⁸²

While China's emphasis on green growth and sustainable development in the 14th Five-Year Plan indicates a growing awareness of the need to integrate environmental concerns into economic development, environmental protection is still viewed as secondary to economic development under the dual circulation strategy. Despite this, China's efforts to engage in carbon emission trading demonstrate its willingness to participate in global climate governance and take a more proactive role in environmental protection.

7.2. COP 27 and China's Attitudes in the Post COVID-19 Era

7.2.1. Sharm El Sheikh Climate Change Conference (COP27), 2022

The COP27 conference held in Egypt in the post-COVID19 era produced significant outcomes to support vulnerable countries in managing the losses and damages caused by the effects of climate change. Member states agreed to limit the global temperature rise to no more than 1.5 degrees Celsius above preindustrial levels and pledged to provide financial, technological, and capacity-building

⁸² Hepburn, C., Qi, Y., Stern, N., Ward, B., Xie, C., & Zenghelis, D, "Towards carbon neutrality and China's 14th Five-Year Plan: Clean energy transition, sustainable urban development, and investment priorities," *Environmental Science and Ecotechnology*, 8, 100130, (2021)

support to poorer countries to reduce greenhouse gas emissions and adapt to the effects of climate change. It will be important to watch China's attitudes toward these outcomes since it plays a significant role in global climate change action.⁸³

An important outcome of COP27 was the establishment of specific funds for loss and damage, which were added to the official agenda. The Sharm el-Sheikh action plan emphasized the need for annual investments of \$4 trillion to \$6 trillion to transition to a low-carbon economy, which will require significant financial system reforms. At COP27, discussions were also held to set new collective goals for climate finance in 2024, taking into account the needs and interests of poor countries.⁸⁴

7.2.2. China's Reaction

Xie Zhenhua that he expects to continue cooperative efforts to raise funds for "loss and damage" to support developing countries in paying for the irreparable damage caused by climate change.⁸⁵ While developing countries like China can voluntarily contribute to losses and damages, rich countries emphasize China's leading role among developing countries, emphasizing its obligation to help underdeveloped countries pay for fighting climate change. However,

⁸³ UNFCCC, "Five Keys Takeaways from COP 27," <https://unfccc.int/process-and-meetings/conferences/sharm-el-sheikh-climate-change-conference-november-2022/five-key-takeaways-from-cop27> (accessed date: Feb 15th 2023)

⁸⁴ UNFCCC, "COP27 Reaches Breakthrough Agreement on New "Loss and Damage" Fund for Vulnerable Countries," <https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries> (accessed date: Feb 15th 2023)

⁸⁵ Jake Spring, "COP27: China's climate envoy says expects cooperation with U.S. to continue," <https://www.reuters.com/business/cop/cop27-chinas-climate-envoy-says-expects-cooperation-with-us-continue-2022-11-19/> (accessed date Feb 15th 2023)

despite being a global powerhouse, China's image as a leader in the environmental field is still developing. As a developing country itself, China must ensure that all developing countries benefit, rather than only receiving benefits as a wealthy nation. This is in contrast to the European Union's earlier proposal that green funding should only go to those most vulnerable, which implies that China, as a developing country, can also enjoy the benefits of other developing countries.⁸⁶ This is in contrast to the European Union's earlier proposal that green funding should only go to those most vulnerable, which implies that China, as a developing country, can also enjoy the benefits of other developing countries.

8. China' s Priority on Domestic Environmental Policies

China's approach to internal and external environmental policies varied depending on the prevailing circumstances. During periods when industrial development took precedence, there was a tendency to prioritize economic growth at the expense of environmental considerations. Furthermore, China aimed to maintain its status as a developing country to evade certain responsibilities within the international society.

The 2000s focused more on industrial development, and since 2010, eco-friendly elements have been added to industrial

⁸⁶ Masood, E., Tollefson, J., & Irwin, A, "COP27 climate talks: what succeeded, what failed and what' s next," *Nature*, 612(7938), (2022), pp.16–17.

development.⁸⁷ While the specificity of China's environmental policy has improved such as taking concrete actions to protect targets such as air pollution, carbon reduction, greening, and marine pollution, with control and monitoring measures in place, the key factor in its implementation remains whether policies align with the country's development priorities. Environmental protection and pollution prevention for sustainable development are given priority, with an attitude that prioritizes domestic issues over international environmental concerns.

China's role in global environmental governance has evolved, with the country playing a more significant role, as evidenced by its early participation in the establishment of the UNFCCC. While China has applied technology transfer from advanced countries for sustainable development and carbon reduction domestically, it also emphasizes the importance of technology transfer and responsibility from developed countries in responding to external pressure for global environmental governance. Despite being a developing country, China has actively responded to climate change, with commitments to reduce carbon emissions, develop non-fossil energy, and increase forest inventory by 2030. However, there are concerns about the accuracy of China's statistical data on energy consumption and its compliance with reporting obligations under the Paris Agreement. Nonetheless, China remains focused on implementing domestic environmental policies, and this does not significantly affect its external environmental policy and attitude.

⁸⁷ MEE, "China's policies and actions for addressing climate change (2020)," (2021)

China prioritizes domestic issues over international environmental concerns, with a particular focus on reducing greenhouse gas emissions and promoting sustainable development domestically. While China recognizes the global environmental impact, it has pledged not to build thermal energy facilities overseas and to reduce its import of coal. However, China still heavily relies on coal and uses overseas markets. China joined the UNFCCC in 1992 and has been participating in the COP as a Non-Annex I country.⁸⁸ Citing its status as a developing country, China demands that developed countries fulfill their reduction obligations and transfer technology based on the CBDR principle, while enjoying the benefits afforded to developing countries without their obligations.⁸⁹ Until 2012, China postponed its obligation to reduce greenhouse gases as a Non-Annex I country under the UNFCCC.

Gradual changes in China's environmental policy have been observed in recent years. During COP19 in 2013, African countries aligned with Europe on climate change, while China, affected by severe air pollution, announced its "National Climate Change Response Strategy." With the Paris Agreement obligating developing countries to reduce carbon emissions, China also needed to take active measures to respond to climate change. Despite being a developing country, China has proactively responded to climate change as reporting obligations are strengthened. In September

⁸⁸ UNFCCC, "Parties" <https://unfccc.int/process/parties-non-party-stakeholders/parties-convention-and-observer-states> (accessed date: Feb.19, 2023.)

⁸⁹ Gang Chen, "China's diplomacy on climate change," *The Journal of East Asian Affairs*, Vol. 22, No. 1 (Spring/Summer 2008), pp. 145–174

2020, President Xi Jinping announced at the 75th U.N. General Assembly that China would increase its national contributions⁹⁰, and at the December 2020 Climate Summit, he publicly pledged to reduce China's carbon dioxide emissions, develop non-fossil energy, and increase forest inventory by 2030.⁹¹ These changes can be seen as external factors influencing China's internal environmental policies.

However, it is important to note that China's commitment to reducing carbon emissions and increasing forest inventory was already announced during the 10th FYP, and these are extensions of environmental policies already implemented domestically. Consequently, China still prioritizes its internal environment over external concerns. Taking advantage of the long-term progress of environmental policies, the international community responded to pressure based on domestic environmental policy implementations.

As a signatory of the Paris Agreement, China is obligated to submit national reports on greenhouse gas emissions and absorption, and to develop and implement national strategies to contribute to climate change mitigation. However, there are concerns that China is not fully complying with these obligations and is instead relying on its developing country status as a justification for taking a detour. Additionally, there have been doubts about the accuracy of China's

⁹⁰ 中华人民共和国外交部, "Statement by H.E. Xi Jinping President of the People's Republic of China At the General Debate of the 75th Session of The United Nations General Assembly," https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/zyjh_665391/202009/t20200922_678904.html (accessed date: Feb 18th 2023)

⁹¹Xinhua News Agency, "Full Text: Remarks by Chinese President Xi Jinping at Climate Ambition Summit," http://www.xinhuanet.com/english/2020-12/12/c_139584803.htm (accessed date: Feb 18th 2023)

statistical data on energy consumption, as it has not been fully defined and measured using unified methods.⁹² Despite these challenges, China has taken some steps to address climate change and integrate it into its social, economic, and environmental policies.

Furthermore, in 2021, China made a firm commitment to uphold the UNFCCC's agreement, while also emphasizing that advanced countries are responsible for responding to climate change due to the accumulated carbon dioxide emissions they have produced.⁹³ China's role in global environmental governance has evolved from representing the interests of developing countries as a developing country to a more significant role, as evidenced by its early participation in the establishment of the UNFCCC. Although external environmental policies have influenced China's expanded role, domestic environmental policies have had a more significant impact by implementing obligations required by the international community through such policies. Thus, changes in China's domestic environmental policies have been prompted more by internal factors than external factors. Despite this, China's internal environmental attitude remains focused on implementing domestic environmental policies and does not significantly affect its external environmental policy and attitude.

Year	China' s FYPs	UNFCCC COPs
1997	Prior to 10 th five-year	COP 3 in Kyoto, Japan

⁹² Tollefson, J., "China' s emissions overestimated," *Nature*, 524(7565), 276, (2015).

⁹³ 国家发展改革委员会, "中国应对气候变化的政策与行动2021年报告", (2021)

	plan <ul style="list-style-type: none"> • The emergence of environmental interests: Sanfei • 32 characters, Three Simultaneities • Prioritizing economic and industrial growth 	(Adoption of the Kyoto Protocol) <ul style="list-style-type: none"> • Ratifying Kyoto Protocol as a developing country
2001	China's 10 th five-year plan <ul style="list-style-type: none"> • Three Represents • Sustainable Development 	COP 7 in Marrakech, Morocco <ul style="list-style-type: none"> • China' s emphasis on internal policies over reducing CO2
2009	China's 12 th five-year plan <ul style="list-style-type: none"> • Three Shifts: Circular economy, Sustainable consumption and production patterns, Low-carbon economy 	COP 15 in Copenhagen, Denmark <ul style="list-style-type: none"> • Reduce CO2 per GDP BY 40% to 45% by 2020 • Common But Differentiated Responsibility
2015	China's 13 th five-year plan initiated <ul style="list-style-type: none"> • BRI and Xiaokang society 	COP 21 in Paris, France <ul style="list-style-type: none"> • NDCs • U.S. withdrawal • China' s focus on

	<ul style="list-style-type: none"> • Development of eco-friendly technology 	global cooperation: Combating Climate Change
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<Table 1. Key events of Five-Year Plans and COPs>

Chapter 3. From Policy to Practice: Examining the Outcomes of China’s Environmental Policy Transformation

1. Limitations of the Effectiveness of China’s Environmental Policy Implementation

This chapter analyzes the impact of China's environmental policies and assesses whether they have resulted in environmental improvements in the country. The course of China’s environmental policy has also been impacted by the introduction of the FYP. Given the critical importance of addressing climate change, a special emphasis will be made on the success of China's efforts to cut carbon emissions, as well as any changes over time. Since the Kyoto Protocol, China has focused on reducing average carbon emissions per capita, rather than total carbon emissions. However, despite these efforts, China's total emissions per capita still exceed those of other developing countries and the global average, which

has led to criticisms of China's role in global climate change efforts. Moreover, with China's economic growth and military expansion, there has been increasing international pressure on the country to take more responsible action on climate change and environmental issues.⁹⁴ As a result, China has been seeking to improve its image by taking actions to reduce greenhouse gas emissions and address global environmental challenges.

In other words, as observed in the FYPs, carbon emissions tend to increase alongside industrial concentration for economic development. However, emissions can be influenced by various factors, such as the advancement of eco-friendly technologies and the implementation of existing environmental policies. Moreover, China's efforts in addressing carbon emissions not only reflect its prioritization of economic development but also highlight its growing commitment to environmental concerns. These developments underscore the recognition China places on both economic growth and environmental preservation.

However, until 2000, there was no standardized data to assess China's environmental improvements, and some data were not disclosed by the Chinese government. Furthermore, the effects of environmental policy implementation are often difficult to measure in the short term and require a long-term perspective. Thus, this chapter will focus on changes in environmental policy implementation from 2000 to the present, in accordance with the

⁹⁴ Deng, Y, "China: the post-responsible power," *The Washington Quarterly*, 37(4), (2014), pp.117–132.

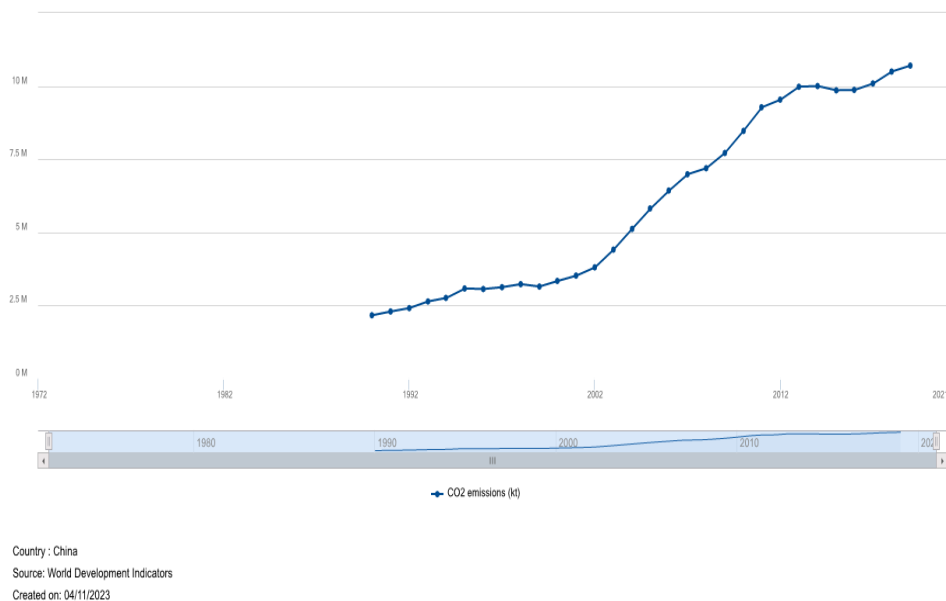
10th FYP, to better evaluate the long-term impact of China's environmental policies.

2. Analysis of the Increase and Cause of China's Absolute Carbon Emission

2.1. The Increase in Carbon Emissions

China has become the world's largest emitter of carbon, and its emissions continue to rise steadily. This upward trend raises questions about the effectiveness of environmental policies in the country. Following <Table 2> below, China's carbon emissions have been steadily increasing. However, the accuracy of data from the 1970s to the 1990s is questionable due to the lack of official announcements by the Chinese government. Although national CO₂ emissions inventories for 1994, 2005, and 2012 have been released, the government's historical lack of transparency in statistical data suggests a lack of interest in environmental issues.⁹⁵

⁹⁵ Shan, Y., Guan, D., Zheng, H., Ou, J., Li, Y., Meng, J., ... & Zhang, Q. "China CO₂ emission accounts 1997–2015" , *Scientific data*, 5(1), (2018), pp. 1–14.



<Table 2. CO₂ emissions (kt) Source: World Development Indicators >⁹⁶

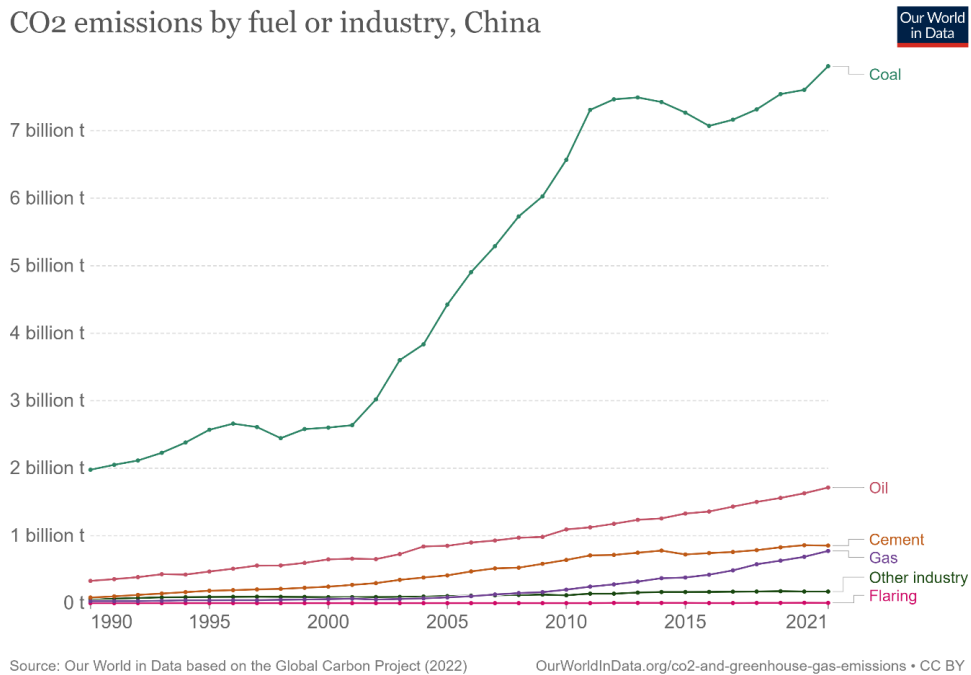
The main cause of CO₂ emissions, according to the UNFCCC, is energy use, which has been fueled by China's large population, increasing fossil fuel consumption, and industrial development,⁹⁷ Coal usage, in particular, has been a significant factor driving up carbon emissions. Especially, industrialization has driven economic growth, but it also leads to a surge in energy consumption and amplifies CO₂ emissions.⁹⁸ Analyzing carbon emissions from fuel use and industry in China, as shown in <Table 3>, reveals a consistent increase. Coal, in particular, has played a crucial role in driving up carbon emissions within the country. The industrial development that drives economic growth has amplified energy

⁹⁶ CO₂ emissions (kt), Source: World Development Indicators. (accessed date. April.11th.2023)

⁹⁷ UNFCCC, Fact Sheet: The need for mitigation, (2009)

⁹⁸ Zhifu Mi, Yi-Ming Wei, Bing Wang, Jing Meng, Zhu Liu, Yuli Shan, Jingru Liu, Dabo Guan, *Socioeconomic impact assessment of China's CO₂ emissions peak prior to 2030*. Journal of Cleaner Production 142 (2017) 2227–2236

consumption and subsequently contributed to CO₂ emissions.



<Table 3. CO₂ emissions by fuel or industry, China Source: Our World in Data>⁹⁹

Industrial development drives economic growth, which can enhance living standards, but it also leads to a surge in energy consumption and significantly amplifies CO₂ emissions.¹⁰⁰ After 1980s, economic reform took root, and China's demand for coal to support its steel, concrete, and energy industries grew insatiable. China recognized early on that its economic progress was heavily reliant on an abundant supply of coal.¹⁰¹ Moreover, industrialization started in specific cities and gave rise to urbanization across China, fueling

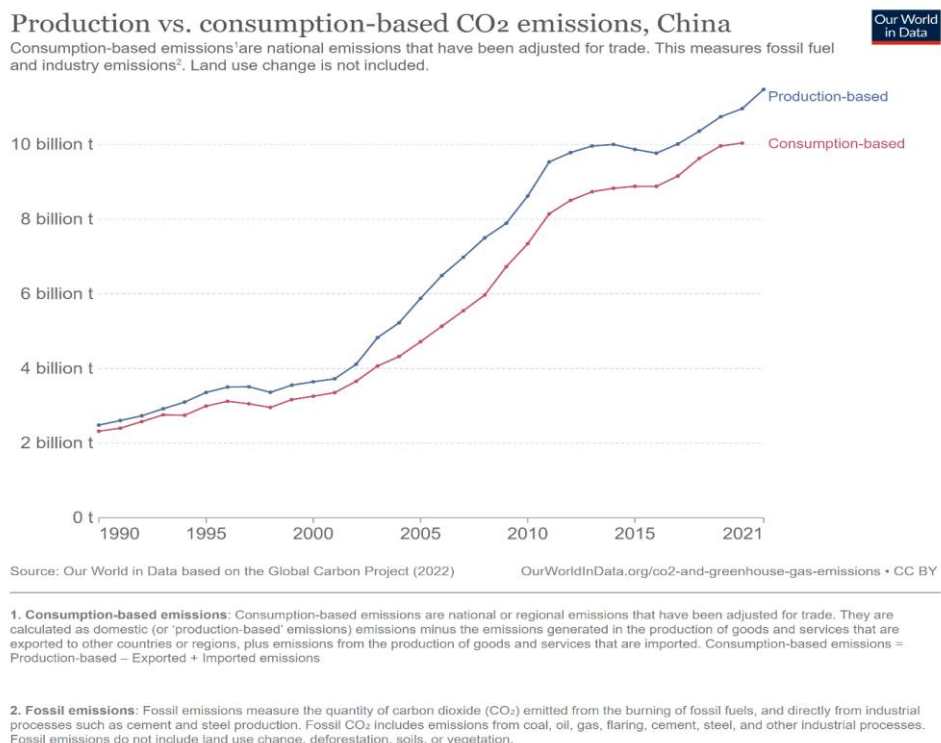
⁹⁹ CO₂ emissions by fuel or industry, China Source: Our World in Data (accessed date: April.11th.2023)

¹⁰⁰ Wang, S., Fang, C., Wang, Y., Huang, Y., & Ma, H, "Quantifying the relationship between urban development intensity and carbon dioxide emissions using a panel data analysis," *Ecological Indicators*, 49, (2015), pp.121–131.

¹⁰¹ Martin, R. "China Rising—a Burgeoning Industrial Superpower Built on Coal [Excerpt]—Scientific American" . Accessed April, 22 (2015).

national economic growth. Urbanization may bring about population concentration, which could strain existing physical and social infrastructure and raise energy consumption levels.¹⁰²

The increase in CO₂ emissions in China can be attributed to various factors, such as energy intensity, industrialization, and urbanization, which have all contributed to the overall rise in carbon emissions. As shown in <Table 4>, carbon emissions have continued to increase in both the production and consumption sectors. Despite various environmental policy efforts, there are limits to the reduction in absolute carbon emissions due to China's priority on economic and industrial development, with environmental policies being implemented incidentally.



¹⁰² Shaojian Wang, Qiuying Li, Chuanglin Fang, Chunshan Zhou, “The relationship between economic growth, energy consumption, and CO₂ emissions: Empirical evidence from China,” *Science of the Total Environment* 542 (2016), pp.360–371

<Table 4. Production vs. consumption–based CO2 emissions, China
Source: Our World in Data>¹⁰³

Therefore, an examination of the causes behind this increase in carbon emissions during this period is necessary. China has set ambitious targets for reducing its CO2 emissions and has made significant progress in achieving them. For example, China has pledged to peak its CO2 emissions by 2030 and achieve carbon neutrality by 2060. These targets, if achieved, will help to reduce China's absolute CO2 emissions in the long run. Therefore, it is important to consider both relative and absolute emissions when analyzing China's environmental policies and their impact on global environmental governance.

China joined the Kyoto Protocol and established environmental development goals through the "Three Presents" initiative during the 10th FYP. However, the visible effects of the reduction measures were not immediate as policy implementation requires time. The same situation can be observed during the 11th FYP. Additionally, the climate change response plan proposed in 2008 emphasized the responsibility of developed countries, and China's stance remained unchanged. As a result, the effectiveness of China's efforts to reduce carbon emissions has been limited, and in some cases, carbon emissions have increased due to the growth of the economic industry.

¹⁰³ Production vs. consumption–based CO2 emissions, China Source: Our World in Data (accessed date: April.11th.2023)

2.1.Cause Analysis

Based on the information presented in <Table 2> and <Table 3>, it is evident that carbon raw material consumption and carbon emissions increased rapidly between 2000 and 2010, which coincided with China's 10th FYP and the 11th FYP. Therefore, an examination of the causes behind this increase in carbon emissions during this period is warranted.

2.1.1. Economy Expands

As China's economy expands, its overall energy consumption is increasing, leading to a rise in absolute CO₂ emissions. Despite efforts to use energy more efficiently, the demand for energy in the energy-intensive transportation and construction infrastructure sectors has historically driven rapid increases in energy consumption for fundamental industrial growth. As a country's per capita income increases into the US\$5–10,000 per capita PPP range. The proportion of energy used for industrial production and infrastructure peaks at around 50% of national consumption, followed by a rising share associated with transportation and other services, including building-related services.¹⁰⁴

The size and composition of the industrial sector, primarily driven by manufacturing and building for urbanization, significantly impact energy and carbon intensity. The post-millennium boom in China saw accelerated urbanization and industrialization with excessive

¹⁰⁴ Grubb, M., Sha, F., Spencer, T., Hughes, N., Zhang, Z., & Agnolucci, P., "A review of Chinese CO₂ emission projections to 2030: the role of economic structure and policy," *Climate Policy*, 15(sup1), (2015), pp.S7–S39

demand for energy consumption and a sudden increase in the proportion of heavy industry in 2003. In response, the leadership of Hu Jintao introduced the concept of "Green Cat Development" as its central strategic goal following the announcement of the 10th Five-Year Plan in 2002.¹⁰⁵ This concept emphasizes considering the environment in economic growth,¹⁰⁶ but it is essential to note that economic growth remains central to this strategy, and the environment is viewed incidentally. Nevertheless, this highlights the increasing interest in environmental issues.

Despite developing and implementing various environmental policies, China's carbon emissions continue to increase due to the priority placed on industrial development.¹⁰⁷ For instance, the 10th FYP targeted industries such as automobiles, machinery, iron and steel, construction, chemicals, and petrochemicals, aiming to increase the proportion of passenger cars and foster the ethylene industry, which emits significant greenhouse gases due to the high-temperature and high-pressure process used to make plastic and vinyl from oil.¹⁰⁸ The continuous construction of chemical industrial facilities and increased steel production have also contributed to China's rising carbon emissions.

2.1.2. Composition of Energy Consumption

¹⁰⁵ 柳艳菊, “应对全球气候变化中国迈出坚实步伐”, *中国环境报*, 06.18(3), (2007)

¹⁰⁶ 胡鞍钢, “低碳经济方兴未艾: “绿猫” 模式的新内涵低碳经济,” *世界环境*, (2), (2008), pp.26–28.

¹⁰⁷ MEE, “Report On the State of the Environment in China.” <http://english.mee.gov.cn/SOE/soechina2002/> (accessed date: April 11th 2023)

¹⁰⁸ Ghanta, M., Fahey, D., & Subramaniam, B, “Environmental impacts of ethylene production from diverse feedstocks and energy sources,” *Applied Petrochemical Research*, 4, (2014), pp.167–179.

Urbanization in China has resulted in a significant rise in energy consumption and CO₂ emissions. Between the 1990s and the 2000s, the energy consumption rates of the trade, commerce, and service sectors, as well as transportation, experienced the highest growth rates. Despite substantial investments in renewable energy technologies, China still heavily relies on coal as its primary energy source.¹⁰⁹ In recent years, the country has increased its use of coal, leading to an overall increase in CO₂ emissions. Coal consumption remains the primary contributor to CO₂ emissions in China.

While China has declared its commitment to protecting the environment and promoting sustainable development through external cooperation, its limited learning and adoption of institutional models from other countries have hindered its influence in global environmental governance. Furthermore, the structure of energy consumption remains unchanged, leading to a persistent increase in carbon emissions primarily attributed to thermal power and coal use.¹¹⁰

To address the issue of carbon emissions, China tried to implement a carbon emission trading system, with several local governments participating in the establishment of emission exchanges through international cooperation with partners such as the EU, and the Chicago Climate Exchange. However, the system does not fully reflect the characteristics of the EU's carbon tax, and

¹⁰⁹ Wang, Q., Zeng, Y. E., & Wu, B. W., "Exploring the relationship between urbanization, energy consumption, and CO₂ emissions in different provinces of China," *Renewable and sustainable energy reviews*, 54, (2016), pp.1563–1579.

¹¹⁰ Yuan, J., Na, C., Lei, Q., Xiong, M., Guo, J., & Hu, Z., "Coal use for power generation in China," *Resources, Conservation and Recycling*, 129, (2018), pp.443–453.

the lack of involvement by local and central governments has hindered its establishment and spread. As a result, environmental pollution has not been effectively controlled, due to China's manufacturing-oriented economic growth and the insufficient awareness of environmental protection by various local governments and companies.¹¹¹

In 2007, China became the first developing country to enact and implement national climate change countermeasures. In 2009, it set a target of reducing unit GDP greenhouse gas emissions by 40% to 45% by 2020.¹¹² However, despite these efforts, China became the largest carbon emitter in 2007. The country's rapid increase in carbon emissions during this period can be attributed to a discriminatory application of policies to reduce carbon emissions. Although strict regulations were put in place in certain cities, manufacturing and production were moved to areas where regulations were relatively relaxed, and carbon emissions continued to rise.¹¹³ China, which achieved rapid economic growth through manufacturing, should have maintained its manufacturing industry, but the resulting energy consumption and CO₂ emissions contributed to an absolute increase in China's carbon emissions.

During the 11th five-year plan period, China attempted to

¹¹¹ 조정원, “중국에서의 환경정책 도입 및 확산의 실패와 한계- 탄소배출권 거래를 중심으로”, 『세계정치』 Vol.17 (동아시아에서 정책의 이전과 확산, 서울대학교 국제문제연구소 2012), pp. 55-93.

¹¹² 中华人民共和国中央人民政府, “中国应对气候变化的政策与行动.” http://www.gov.cn/zhengce/2011-11/22/content_2618563.htm (accessed date: April 11th2023)

¹¹³ Xu, R., & Lin, B, “Why are there large regional differences in CO₂ emissions? Evidence from China's manufacturing industry,” *Journal of Cleaner Production*, 140, (2017), pp.1330-1343.

establish energy transactions and carbon emission trading systems, but these efforts ultimately failed. For example, the Beijing Environmental Exchange and the Shanghai Environmental Energy Exchange were established in August 2008 but did not yield economic benefits and are not currently operating. In September 2008, an emission exchange was opened in Tianjin through cooperation with the CERs Exchange, but it too did not succeed. In 2011, seven regions were selected as pilot areas for emission trading, but the spread of the carbon emission trading system remains insufficient, as it is not set to take place until 2021.

Overall, although China has made efforts to address its energy consumption and carbon emissions, there is still much work to be done to effectively control environmental pollution and promote sustainable development. The use of coal remains the biggest contributor to environmental pollution in China.

2.1.3. Long-Term Process of Implementation

China is undergoing a long-term process to transform its economic system into a more environmentally friendly and low-carbon one. This process involves investing in clean energy technology, increasing energy efficiency, and making adjustments to consumption habits. It is important to note that the implementation of environmental policies is a long-term process. Despite significant efforts to address climate change and reduce carbon emissions, it is expected that China's absolute CO₂ emissions will continue to rise in the near to medium term due to the ongoing

process of economic transformation and the gradual implementation of long-term environmental policies.

After the adoption of the Kyoto Protocol, China developed an internal program to respond to climate change in the context of economic and industrial development. The government delegated responsibility to various agencies to promote active participation in responding to climate change within Chinese society. For example, the National Development and Reform Commission (NDRC) oversees inter-agency mechanisms on climate change, while the National Environmental Protection Agency (SEPA) and the China Meteorological Administration (CMA), now known as the Ministry of Ecology and Environment (MEE), play supporting roles. By implementing top-down environmental policies, the government has been able to exert control over policy application and influence domestic society relatively quickly. However, there have been shortcomings in terms of control and investigation systems, which has required more time to develop and implement effective policies.¹¹⁴

In 2006, China announced its National Climate Change Program as part of the 11th five-year plan. The program aimed to achieve greenhouse gas reduction goals by revitalizing hydroelectric and nuclear power generation, as well as expanding the use of alternative fuels.¹¹⁵ China has also taken steps to strengthen the

¹¹⁴ Gang Chen, "China's diplomacy on climate change," *The Journal of East Asian Affairs*, Vol. 22, No. 1 (2008), pp.145-174

¹¹⁵ 서운석, "중국의 기후변화 대응정책 분석," 『현대중국연구』 제 9권 제 1호 (2007), pp.213-251

legal framework for energy by promoting the composition and revision of laws and regulations that support greenhouse gas mitigation. Additionally, China has fully implemented the Renewable Energy Act, which mandates the development and installation of wind power equipment, solar cell technology, and solar power generation. These measures allowed China to announce a global warming prevention plan aimed at reducing 950 million tons of greenhouse gases by 2010.¹¹⁶

By setting concrete targets and publicly announcing them, China has demonstrated its willingness to actively address the issue of climate change. However, it should be noted that the effects of these policies may not be immediately visible, as it takes time to develop and implement eco-friendly energy-related technologies, install power plants, and realize the full impact of these measures. China's commitment to renewable energy was demonstrated in 2005 when the standing committee of the National People's Congress enacted a law requiring Chinese power grid companies to buy all the electricity generated by the sector. The implementation of renewable energy legislation, however, was a protracted process that called for a substantial financial outlay and physical building. As an example, construction on the foundation for the maglev wind turbine generators, funded by the Zhongke Hengyuan Energy Technology company with CN400 million, commenced in November 2007. The integration of the 1.5 MW generators into the grid was

¹¹⁶ 国家发展和改革委员会, "China's National Climate Change Program," http://un.china-mission.gov.cn/eng/gyzg/200911/t20091110_8405777.htm (accessed date: Feb 14th 2023)

not completed until 2011 at the latest.¹¹⁷

Before the 2009 Copenhagen Climate Change Conference, China announced a 40–45% reduction in carbon intensity, hoping to showcase its domestic reduction efforts and gain recognition from the international community. China saw these efforts as a leading and positive example, and for the first time, established a national press conference room at the conference to inform the world of its domestic reduction efforts and convey its position on climate negotiations to global media. However, institutional limitations such as the failure of the Environmental Exchange and continuous industrial development have resulted in increased carbon emissions. The ongoing process of economic transformation and implementation of environmental policies will continue to play a significant role in China's efforts to address climate change in the coming years.

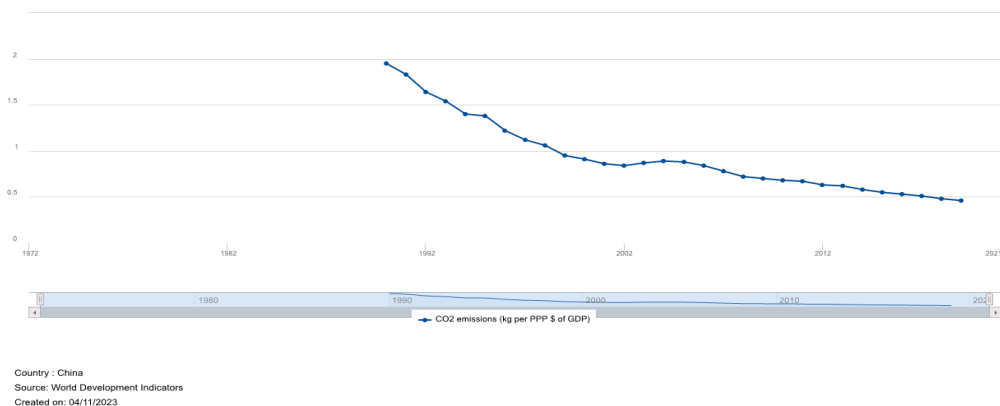
3. Analysis of the Increase and Cause of the Relative Carbon Emission Reduction in China

3.1. The Relative Carbon Emission Reduction in China

Although the absolute amount of carbon emissions increases, the relative amount of carbon emissions measured in terms of purchasing power parity (PPP) decreases, as shown in <Table

¹¹⁷ Liao, C., Jochem, E., Zhang, Y., & Farid, N. R. "Wind power development and policies in China," *Renewable Energy*, 35(9) (2010), pp.1879–1886.

5>.¹¹⁸ This can be interpreted as a trend in which the relative proportion of carbon emissions decreases with China's economic growth. A decoupling effect exists between China's economic development and carbon emissions, with relative figures declining due to changes in labor, investment, and energy structure. The ratio of new and renewable energy in the income and energy consumption composition is a significant factor in this decoupling effect.¹¹⁹ However, it's important to note that changes in components and increases in energy intensity can affect the decreasing trend of relative figures. Despite these trends, China's CO₂ emissions continue to rise, and the impact of China's implementation of environmental policies remains to be seen, given that China has not given up its developing country status at the UNFCCC.



¹¹⁸ Shaojian Wang, Qiuying Li, Chuanglin Fang, Chunshan Zhou, “The relationship between economic growth, energy consumption, and CO₂ emissions: Empirical evidence from China,” *Science of the Total Environment* 542 (2016), pp.360–371

¹¹⁹ 임형우, & 조하현, “경제성장과 탄소배출량의 탈동조화 현상 분석: 63 개국 동태패널분석 (1980~ 2014 년),” 『자원환경경제연구』, 28(4) (2019), pp. 497–526.

<Table 5. CO₂ emissions (kg per PPP \$ Of GDP) Source: World Development Indicators >¹²⁰

Starting from the 12th Five-Year Plan (FYP), China's environmental policies began showing medium-term effects. Notably, China established targets for carbon emission peaks by 2030 and announced its commitment to achieving carbon neutrality by 2060 during the 14th FYP. This external declaration aligns with the observable impacts of China's environmental policy implementation. Additionally, China's Yangtze River Protection Law, which encourages top-down implementation of green development through tangible legislative measures, was enacted in 2021.¹²¹ Despite economic growth, this national effort to reduce carbon emissions led to a relative drop in emissions. As a result, there was a consistent decline in relative emissions over this period. Furthermore, China actively engaged in international affairs and assumed corresponding obligations, which further altered the relative proportions due to an increasing willingness to address environmental issues.

3.2. Cause Analysis

3.2.1. Structural Changes in the Chinese Economy

China's economy has undergone significant structural changes in

¹²⁰ CO₂ emissions (kg per PPP \$ Of GDP), Source: World Development Indicators. (accessed date. April.11th.2023)

¹²¹ Yee, A. S., & Guo, D, "Yangtze river protection law of the People' s Republic of China: Overview of key provisions and policy recommendations," (2021)

recent years, shifting away from heavy industry and toward service-oriented sectors.¹²² This shift has contributed to a decline in energy-intensive industry and manufacturing, leading to a relative reduction in CO₂ emissions. For example, the awareness of environmental issues and the recognition of eco-social benefits among Chinese consumers have had a positive effect on their attitudes towards environmental problems and eco-social advantages. Moreover, the transformation of the Chinese economic structure has been found to significantly influence consumers' environmentally conscious purchasing behavior.¹²³

To balance economic growth and environmental protection, China has proposed a low-carbon economic development plan. The 18th National Congress of the Communist Party of China emphasized the need to change energy consumption patterns and reduce carbon emissions. Since then, China has implemented policies to promote renewable energy and reduce emissions from vehicles and industries. However, economic growth remains a top priority, and environmental protection does not always take precedence.

Companies and the government are now pursuing economic development and carbon reduction efforts together, recognizing the need to balance industrial growth with environmental protection and pollution control. This marks a significant shift as nationwide regulations for environmental protection and pollution control are

¹²² Bekkers, E., Koopman, R. B., & Rêgo, C. L., "Structural change in the Chinese economy and changing trade relations with the world," *China Economic Review* 65 (2021), 101573.

¹²³ Cheung, M. F., & To, W. M., "An extended model of value-attitude-behavior to explain Chinese consumers' green purchase behavior," *Journal of Retailing and Consumer Services*, 50, (2019), pp.145–153.

being implemented for the first time. For example, the Chinese government has chosen BYD, a pioneer in the electric car industry, as a priority target for assistance. As a result, BYD has benefited from government purchases, financial support, and subsidies. In September 2012, the central government chose BYD's all-electric passenger car E6 as a "trial operation model for public electric vehicles," and it received 50% of all government sales. BYD has become a representative Chinese corporation for environmental preservation through ESG business strategies.¹²⁴

Currently, China has announced the 1+N climate policy framework, which goes beyond stating its goals. The "1" in the framework title refers to a comprehensive "practice guideline" that identifies key strategic priorities. The "N" represents both disclosure and future action plans in key sectors and industries to achieve carbon peaks and neutrality.¹²⁵ In other words, the framework emphasizes that efforts to achieve carbon neutrality must be integrated into the overall framework of economic and social development, following national guidelines that prioritize conservation and implement statewide plans. It also calls for utilizing the power of government and markets both domestically and internationally while guarding against risks. In the short term, the focus is on reducing the concentration of carbon emissions in domestic production.¹²⁶

¹²⁴ Jiang, T, "Analysis of BYD Green Marketing," *Economic Management Journal*, 10(1), (2021).

¹²⁵ 中华人民共和国中央人民政府, "China's "1+N" Policy Framework," http://us.china-embassy.gov.cn/eng/zt/climatechange/202111/t20211117_10449121.htm (Accessed date: March 23th 2023)

¹²⁶ World bank Group, (China) Country climate and development report, World Bank Group (East Asia Pacific), (October 2022)

Although the effectiveness of the plan cannot be fully evaluated at this point, China's steady pursuit of eco-friendly goals and related technology development are expected to reduce the absolute amount of carbon emissions in the future and contribute to a relative reduction in carbon emissions due to economic development and related technological advances.

3.2.2. Deployment of Clean Energy Technologies and Implementation of Environmental Policies

China has invested heavily in renewable energy sources, including hydroelectric, solar, and wind, which have helped reduce the country's dependence on fossil fuels and cut CO₂ emissions. The Chinese government has steadily implemented various environmental policies and laws to reduce CO₂ emissions, such as establishing a cap-and-trade system to control emissions from major industrial businesses, a national carbon market, and higher automobile emission requirements.¹²⁷

In 2014, China revised its environmental protection policies to give greater emphasis to companies' awareness and responsibility for pollution emissions. These policies required companies to disclose environmental information, established controls at both national and local levels, and emphasized the role of courts and environmental police in imposing penalties for illegal emissions. China also established an Environmental Protection Bureau within

¹²⁷ Kittner, N., Lill, F., & Kammen, D. M., "Energy storage deployment and innovation for the clean energy transition," *Nature Energy*, 2(9), (2017), pp.1–6.

the public security office and an Environmental Criminal Investigation Division to strengthen oversight and enforcement mechanisms.¹²⁸

The provincial government in China was assigned specific targets for developing industrial and energy structures, reducing energy consumption, and promoting renewable energy sources.¹²⁹ Since 2011, the Chinese government has released annual plans for controlling greenhouse gas emissions and strengthened greenhouse gas control and monitoring systems at the national level. In response to climate change, the government has announced several major policy documents, including the National Climate Change Adaptation Strategy in 2013,¹³⁰ the 2014–2015 Action Plan on Energy Conservation, Emission Reduction, and Low-Carbon Development, and the National Response to Climate Change Plan (2014–2020). All of these efforts have contributed to the development of legislation to support China's response to climate change at the domestic level.¹³¹

In addition, the Chinese government has introduced the Guidelines for Establishing the Green Financial System to promote the growth of a green financial market. This system offers low-interest loans

¹²⁸ 王灿发, “新《环境保护法》实施情况评估研究简论,” *中国高校社会科学* (4) (2016), pp.108–114.

¹²⁹ 张永芳, ““十二五”经济转型背景下我国碳金融发展策略研究,” *商业时代* (15) (2012), pp.58–59.

¹³⁰ 国家发展和改革委员会, “国家适应气候变化战略,” <https://www.gov.cn/gzdt/att/att/site1/20131209/001e3741a2cc140f6a8701.pdf> (accessed date: March 13th 2023)

¹³¹ 国务院, “国家应对气候变化规划(2014–2020年),” <https://policy.asiapacificenergy.org/sites/default/files/%E5%9B%BD%E5%AE%B6%E5%BA%94%E5%AF%B9%E6%B0%94%E5%80%99%E5%8F%98%E5%8C%96%E8%A7%84%E5%88%92%E5%BC%882014-2020%E5%B9%B4.pdf> (accessed date: March 13th 2023)

to companies that implement renewable energy and green infrastructure projects and supports R&D projects for technology development.¹³² It applies to all regions of China, encouraging overall growth, and has a positive effect on environmental quality by promoting eco-friendliness. This approach has also helped China receive positive scores in ESG evaluation indicators. Additionally, China's "New Normal" policy aims to shift toward a low-carbon approach as a strategic opportunity to address the domestic environmental crisis and mitigate international concerns, reducing the relative amount of carbon emissions by increasing the denominator in the carbon emission/PPP of GDP formula.¹³³

The Xi Jinping administration is making various efforts in the 13th Five-Year Plan, advocating a new development ideology that seeks balanced and integrated development between various policy sectors, and implementing the Measures for Evaluating the Implementation of the Air Pollution Prevention and Control Action Plan. Additionally, the government has launched several campaigns to reduce pollution levels in China, such as the Blue Sky Protection Campaign, which aim to reduce air and water pollution, respectively. The Blue Sky Protection Campaign, for instance, has set targets to reduce Particulate Matter (PM2.5) concentrations by at least 15% in over 300 cities in the northern regions of China. The campaign also aims to reduce nitrogen oxide emissions and other pollutants

¹³² Zhou, X., Tang, X., & Zhang, R, "Impact of green finance on economic development and environmental quality: a study based on provincial panel data from China," *Environmental Science and Pollution Research* 27 (2020), pp.19915–19932.

¹³³ Hilton, I., & Kerr, O, "The Paris Agreement: China's 'New Normal' role in international climate negotiations," *Climate Policy* 17(1) (2017), pp.48–58

from heavy industries such as steel, coal, and petrochemicals.

To achieve its ambitious environmental targets, the Chinese government is making substantial investments in renewable energy and clean technologies, including electric vehicles, energy-efficient buildings, and carbon capture and storage. The government is also promoting international cooperation and partnerships to address climate change and protect the environment. Additionally, China is participating in global initiatives such as the Belt and Road Initiative, which aims to promote sustainable infrastructure development and green investments across Asia and beyond.

In summary, China has taken significant steps in recent years to address environmental pollution and promote sustainable development. The government has introduced various policies and initiatives to reduce greenhouse gas emissions, promote clean energy and technologies, and enhance environmental protection measures. However, balancing economic growth and environmental protection remains a significant challenge, particularly in underdeveloped regions. The success of China's environmental policies will depend on their effective implementation and enforcement at all levels of government, as well as China's ability to promote green development and international cooperation.

3.2.3. International Cooperation

To address global environmental challenges, China has collaborated with other nations and international organizations. In 2015, China published the document 'Enhanced Actions on Climate

Change: China's Intended Nationally Determined Contributions' outlining its climate change response policy, which includes several goals such as reaching the peak of carbon dioxide emissions by 2030, increasing the share of non-fossil energy in primary energy consumption by 2030, and reducing unit GDP carbon dioxide emissions by 60% to 65% from 2005 levels.

As an active participant in global efforts to combat climate change, China was instrumental in the development of the Paris Agreement and pledged to peak its CO₂ emissions by 2030. China has set long-term climate targets such as reducing CO₂ intensity by more than 65% from 2005 levels and increasing the share of non-fossil fuels in primary energy consumption to 25%. These targets demonstrate China's commitment to the Nationally Determined Contribution (NDC) under the Paris Agreement and its efforts to address climate change.

China's inclusion of these goals in its 13th Five-Year Plan and its commitment to fulfilling the Paris Agreement reflect its active attitude towards addressing global environmental challenges. While the announcement of the goal is not an absolute obligation to reduce emissions, China's cooperation with other countries in reducing emissions and addressing climate change demonstrates its commitment to combating climate change on a global scale.

4. Summation

China's national interest has been a driving force behind the

changes in its carbon emissions. China's carbon emissions have undergone significant changes since its initial interest in the environment in 1972. While the absolute amount of emissions has continued to increase, the relative amount has decreased. However, this cannot be attributed solely to the implementation of environmental policies. Economic development has been prioritized over environmental policy, leading to an increase in industrial development and carbon emissions. China is actively seeking to change its environmental policy through institutional learning and direct implementation, but its position valuing economic development and reduction obligations has not changed significantly. The country still adheres to the principle of fairness, emphasizing voluntary obligations for developing countries without significant changes in the perception of the responsibilities and obligations of developed and developing countries.

Moreover, while the U.S.'s withdrawal from the Paris Agreement reduces climate change-related pressure on China, the allocation of reduction goals by region and the establishment of action plans represent significant changes in China's climate change response policy before and after the Paris Agreement. China's adherence to the principle of CBDR reflects its desire for a distinct duty from the U.S. and the EU. Its environmental policies are implemented based on domestic economic development rather than international pressure, and China's passive climate change response policy is an attempt to secure energy and climate change technology through

the CDM.¹³⁴

China is making active efforts to reduce its carbon emissions and address climate change. However, it remains to be seen whether its ambitious goals can be effectively implemented, given the country's continued emphasis on economic growth and the challenges associated with the transition to eco-friendly technologies.

Chapter 4. China' s Role in Global Environmental Governance: Interactions with the US and EU

1. The Necessity of Global Environmental Governance

Governance refers to a political approach where multiple stakeholders collaborate equally to achieve public goals. Environmental governance, on the other hand, involves the establishment of multilateral partnerships.¹³⁵ To address global environmental issues, it is necessary to collaborate with a diverse range of actors beyond national governments in global environmental governance. This is essential because environmental problems often cross borders and require global cooperation for effective regulation and resolution.¹³⁶

¹³⁴ 이재영, “파리협정 이후 중국 기후변화대응 정책에 영향을 미치는 요인: 대내외적 변수를 중심으로,” 『현대중국연구』 20(1), (현대중국학회, 2018), pp.39-87.

¹³⁵ 차경은, “법적 측면에서 본 글로벌 환경거버넌스-기후변화협약체제를 중심으로,” 『법학연구』 22(2), (2012), pp.275-306

¹³⁶ Biermann, F., & Pattberg, P, “Global environmental governance: Taking stock, moving forward,” *Annual Review of Environment and Resources* 33 (2008), pp.277-294.

To prevent environmental damage between countries and control entities that cause pollutants, principles such as the ‘polluter pays’ principle, common but differentiated responsibility principle, precautionary principle, and environmental impact assessment principle are used. These principles serve as important tools to ensure the sustainable management of global environmental resources and protect the well-being of present and future generations.

China now plays an insufficient part in global environmental regulation. The US¹³⁷ and the EU¹³⁸, who are spearheading efforts to improve global environmental governance, have a longer history of enacting environmental regulations than China, which passed the Environmental Protection Act in 1989. Moreover, China's environmental policies are often implemented as a secondary priority to economic and industrial development. Although China has expressed interest in participating in international environmental initiatives, it still considers itself a developing country and has limited influence in global environmental governance.

China does not hold a prominent position in global environmental governance. Despite being the largest emitter of greenhouse gases, it continues to classify itself as a developing country in the environmental sphere and benefits from the privileges accorded to developing nations. Nevertheless, China's significant environmental impact cannot be ignored, positioning it as a representative of

¹³⁷ National Environmental Policy Act (NEPA), the first major U.S. environmental law. Enacted in 1969 and signed into law in 1970 by President Richard M. Nixon.

¹³⁸ Environmental Action Programme was adopted in July 1973

developing countries that emphasize the burden of responsibility on developed nations. In international diplomacy, China plays a dual role: safeguarding developing countries' interests while criticizing the existing major powers.¹³⁹ This stance enables China to assert its influence while simultaneously seeking opportunities to learn from developed countries and engage in cooperative endeavors with them. However, it is important to acknowledge that global dynamics also involve competitive aspects, with countries vying against each other for various resources and advantages.

China's activities are motivated largely by national interests. As discussed in the previous chapter, China has been able to benefit from technology transfer and financial support from developed countries while maintaining its status as a developing nation within the UNFCCC framework. Notably, the Clean Development Mechanism (CDM) introduced in the Kyoto Protocol has played a significant role in facilitating technology development in China and has led to the establishment of the China Clean Development Mechanism Fund (CCDMF), promoting low-carbon growth technologies within the country. The CCDMF has attracted the interest of government representatives from Brazil, Vietnam, and Cambodia, who are currently studying China's Climate Financing model. By transferring technology acquisition for China's development to other developing countries, China is expanding its influence and contributing to the growth and progress of its

¹³⁹ Sun, Y. "The changing role of China in global environmental governance." *Rising Powers Quarterly*, 1(1), (2016). Pp.43–53.

counterparts.¹⁴⁰

2. China and the US and in Global Environmental Governance: Cooperation and Challenges

The United States and China, two of the largest economies in the world and major contributors to greenhouse gas emissions, have a critical role to play in global environmental governance. Collaboration and cooperation between these nations are vital for addressing the pressing environmental issues the world faces today. This chapter will delve into the roles that China and the US have played in global environmental governance, examining their interactions, cooperation, and the challenges and opportunities for their collaboration in this critical field.

2.1. Cooperation between China and the US

Cooperation between China and the US is crucial to effectively tackle the pressing environmental issues that the world is currently facing, particularly in the area of climate change. Both nations are among the largest economies and top emitters of greenhouse gases, and their collaboration and involvement in global environmental governance is essential to achieving meaningful progress.

Despite past differences, China and the US have begun to work together to address climate change. After the US withdrew from the Kyoto Protocol in 2001, the possibility of environmental cooperation

¹⁴⁰ UNFCCC. The China Clean Development Mechanism Fund (CCDMF): <https://unfccc.int/climate-action/momentum-for-change/financing-for-climate-friendly/china-clean-development-mechanism-fund> (accessed date: 2023.04.09)

between the two countries was uncertain. As a developing country, China was not required to take on emissions reduction targets under the agreement. However, the Copenhagen Climate Conference in 2009 signaled a shift in US–China relations on climate change. At the conference, there was initial friction between the two countries on the agreement process, but under the leadership of the United States, developing countries including China promised active participation and monitoring, reporting, and verification (MRV) to respond to climate change.¹⁴¹ This led to the eventual agreement of member countries to the Copenhagen Accord, a non-binding agreement aimed at limiting global temperature rise to below 2 degrees Celsius above pre-industrial levels.

The US–China agreement at the conference demonstrated the willingness of all UNFCCC member states to actively participate in addressing climate change. The two countries also subsequently worked together in the lead-up to the Paris Agreement in 2015, which was widely regarded as a major step forward in international climate cooperation. While there have been challenges to US–China cooperation on climate change in recent years, including the US's withdrawal from the Paris Agreement under the Trump administration, both countries have reaffirmed their commitment to tackling the issue under the Biden administration, signaling the potential for continued collaboration and progress in global environmental governance.

¹⁴¹ Christoff, P, “Cold climate in Copenhagen: China and the United States at COP15,” *Environmental Politics*, 19(4) (2010), pp.637–656.

In 2014, China and the United States signed the U.S.–China Joint Announcement on Climate Change, which committed both countries to working together on initiatives to combat climate change. China pledged to peak carbon dioxide emissions by 2030 and increase the share of non–fossil fuels in primary energy consumption to around 20 percent by the same year, while the US committed to cutting net greenhouse gas emissions by 26–28 percent below 2005 levels by 2025. The announcement marked the end of mutual responsibility transfer between the two countries that had persisted since the failed Copenhagen climate negotiations in 2009 and helped pave the way for the Paris Agreement in 2015.

Cooperation between the U.S. and China over the Paris Agreement led to the establishment of specific projects such as the "US–China Climate Change Working Group" and the U.S.–China Clean Energy Research Center (CERC). The agreement between President Obama and President Xi Jinping called for strengthened bilateral cooperation on climate change and making efforts to reach an agreement on the Paris Agreement. As a result, the two countries announced measures after 2020, with the U.S. promising to cut emissions by 26–28% from 2005 levels, and China pledging to achieve peak CO₂ emissions and increase the proportion of non–fossil fuels by 2030. The agreement also emphasized U.S.–China cooperation in environmental protection, including joint clean energy research and development, strengthening cooperation on HFCs (a greenhouse gas), launching climate smart/low carbon city

initiatives, and promoting green commodity trade.¹⁴² However, with the advent of the Trump administration, climate cooperation between the two countries has virtually ceased.

Despite the setback in US–China climate cooperation under the Trump administration, China has made significant efforts in promoting clean energy. In 2017, China invested a record high of \$162.4 billion in clean energy, which accounted for nearly half of the world's total investment.¹⁴³ China is a global leader in the production of solar panels and wind turbines, surpassing Denmark as the world's largest wind turbine producer in 2015.¹⁴⁴ In 2019, China's wind power generation capacity exceeded the combined capacity of all EU countries and more than doubled that of the United States. These achievements demonstrate China's active efforts to shift towards eco–friendly energy resources and participate in environmental technology development.¹⁴⁵

The Biden administration has proposed establishing alternative resources for development finance to cover low–carbon energy investment. President Biden has emphasized the importance of international clean energy partnerships such as Mission Innovation and the Ministerial on Clean Energy in connecting with global research networks to identify and design technology partnerships

¹⁴² Office of the Press Secretary, “The White House Office of the Press Secretary. U.S.–China Joint Announcement on Climate Change,” <https://obamawhitehouse.archives.gov/the-press-office/2014/11/11/us-china-joint-announcement-climate-change> (accessed date: April 16th 2023)

¹⁴³ Bloomberg New Energy Finance, “Clean Energy Investment Trends, 2019,” <https://data.bloomberglp.com/professional/sites/24/BloombergNEF-Clean-Energy-Investment-Trends-2019.pdf> (accessed date: April 16th 2023)

¹⁴⁴ 안상욱, “세계기후 변화 대응과 중국의 부상,” 『중소연구』 42(1), (2018), pp.101–134.

¹⁴⁵ REN21, “Renewables 2020 Global Status Report. 2020,” https://www.ren21.net/wp-content/uploads/2019/05/gsr_2020_full_report_en.pdf (accessed date: April 16th 2023)

through policy design and relocation.¹⁴⁶ Additionally, the United States seeks to develop a series of bilateral clean energy technology partnerships with countries that have negotiated and implemented efforts to protect intellectual property rights and build cross-border trust.¹⁴⁷

At UNFCCC COP26, the United States and China declared the U.S.–China Joint Glasgow Declaration, promising joint efforts to respond to climate change in the 2020s.¹⁴⁸ The two countries confirm cooperation in the process with the UNFCCC to resolve the climate crisis and solidify the implementation of the Paris Agreement system. The U.S.–China Joint Glasgow Declaration promises joint efforts in responding to climate change through the UNFCCC process and implementing the Paris Agreement system. Specifically, the two countries will collaborate to establish standards for regulatory frameworks and policies that promote the reduction of greenhouse gas emissions, as well as maximize social benefits and advance the transition to clean energy. This cooperation between the two nations in the environmental field is crucial for achieving a sustainable future. The US and China demonstrate cooperation by fulfilling their respective responsibilities in the environmental sector and actively engaging in the sharing of technologies and perspectives throughout the process.

¹⁴⁶ Lewis, J. I, “Managing intellectual property rights in cross-border clean energy collaboration: The case of the US-China Clean Energy Research Center,” *Energy policy* 69 (2014), pp.546–554.

¹⁴⁷ Lewis, J. I, “Toward a New Era of US Engagement with China on Climate Change,” *Georgetown Journal of International Affairs* 21 (2020), pp.173–181.

¹⁴⁸ U.S. Department of STATE, “U.S.–China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s,” <https://www.state.gov/u-s-china-joint-glasgow-declaration-on-enhancing-climate-action-in-the-2020s/> (accessed date: April 15th 2023)

2.2. The Challenges of Environmental Cooperation between China and the United States

China's development of energy infrastructure in developing countries, while maintaining its status as a developing country, is contributing to the global increase in coal use.¹⁴⁹ China's strategy and behavior in global environmental governance are primarily driven by its national interests, which result in certain limitations on its expansion of influence, particularly when compared to the US. The Belt and Road Initiative (BRI) is a major infrastructure investment policy that enables Chinese energy companies to lower costs in building power plants in other countries. However, this has resulted in China building more fossil fuel power plants in developing countries, including in Southeast Asia, than clean energy plants. This trend is expected to hinder China's progress in reducing carbon emissions in the coming decades.

Chinese companies have a significant role in the construction, ownership, or financing of 19 coal-fired power plants under development outside of China, with the majority located in South and Southeast Asia.¹⁵⁰ In fact, Chinese companies account for at least 16% of all coal-fired power plants under development globally. Despite this, Some Southeast Asian countries hope that the United

¹⁴⁹ Masood, E, "How China is redrawing the map of world science," *Nature* 569(7754) (2019), pp.20–24.

¹⁵⁰ Morgan Herve-Mignucci, Xueying Wang, "Slowing the Growth of Coal Power outside China: The Role of Chinese Finance," <https://climatepolicyinitiative.org/publication/slowing-the-growth-of-coal-power-outside-china-the-role-of-chinese-finance/> (accessed date: April 20th 2023)

States will loosen its restrictions on China, as they are faced with the dilemma of choosing between U.S. and Chinese support. However, the United States sees China's Belt and Road Initiative as expansionist and seeks to counter it, resulting in competition between the two countries.¹⁵¹

The competition between the United States and China is reflected in the imposition of countervailing duties. This began with the U.S. filing a WTO complaint against China's wind equipment subsidies in October 2010 , and since then, the two countries have been in a state of competition due to China's green industry subsidies,¹⁵² and since then, the two countries have been in a state of competition due to China's green industry subsidies. This has led to the imposition of countervailing tariffs on solar panel parts. The U.S. has alleged that subsidies arising from China's implementation of eco-friendly policies have caused economic problems, causing tension between the two countries.

The US and China have been competing in the field of green industry subsidies and trade, resulting in the imposition of countervailing duties by both countries. For instance, China's Golden Sun Program of 2009¹⁵³ offered subsidies for solar photovoltaic power generation projects with the goal of increasing solar panel installations. However, the US sees the influx of cheap

¹⁵¹ Bisley, N, "Contested Asia's 'New' multilateralism and regional order," *The Pacific Review* 32(2) (2019), pp. 221–231.

¹⁵² DS419: China–Measure concerning wind power equipment (22 Decemenber 2010). https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds419_e.htm

¹⁵³ IEA, "Golden Sun Programme," <https://www.iea.org/policies/4992-golden-sun-programme> (accessed date: April 7th 2023)

Chinese environmental goods as dumping, leading to the imposition of countervailing tariffs on China. In 2021, the US even took safeguards on solar photovoltaic products, further tightening checks on eco-friendly goods from China.¹⁵⁴ This competition not only raises doubts about the cooperation between the two countries in global environmental governance but also contradicts the US's willingness to engage China in environmental sustainability talks.¹⁵⁵ This situation also affects solar companies in both countries, as they maintain exports and imports from foreign suppliers through global supply chains and promote solar power through foreign investment.¹⁵⁶

Restricting access to markets to force trading partners to change their production standards, even if they violate GATT/WTO rules, can serve as a barrier to international cooperation for environmental protection.¹⁵⁷ While there may be various reasons for such restrictions, they can ultimately hinder efforts to address global environmental challenges and undermine the principles of free and fair trade.

Additionally, the US officially emphasized the importance of not ceding clean energy technology to China. China's reliance on the United States for technological advancements is apparent, as it is

¹⁵⁴ DS562: United States – Safeguard Measure on Imports of Crystalline Silicon Photovoltaic Products: https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds562_e.htm

¹⁵⁵ Hughes, L., & Meckling, J. (2017). The politics of renewable energy trade: The US–China solar dispute. *Energy Policy*, 105, 256–262.

¹⁵⁶ WTO, “China, US welcomed as new participants in trade and environmental sustainability talks,” https://www.wto.org/english/news_e/news21_e/tessd_04nov21_e.htm (accessed date: April 7th 2023)

¹⁵⁷ Vogel, D, “Trading up and governing across: transnational governance and environmental protection,” *Journal of European public policy* 4(4) (1997), pp.556–571.

considered to be inferior in this aspect. However, despite this dependency, the United States expressed its willingness to continue sharing pertinent technologies with China, with a focus on fostering collaboration in the environmental sector rather than outright rejection. Notably, the U.S. is actively investing in a range of technologies to maintain pace or even stay ahead of China, supporting military operations, and addressing greenhouse gas emissions through mitigation and reduction efforts.¹⁵⁸ On top of that, the recent implementation of the U.S. Inflation Reduction Act (IRA) has restricted the sharing and cooperation of green energy between the U.S. and China. These situations make it challenging for China to establish environmental protection through cooperation with the US, thereby hindering its ability to expand its influence in global environmental governance.

3. China and the EU in Global Environmental Governance: Cooperation and Challenges

3.1. Cooperation between China and EU

The cooperation between China and the EU is reflected in China's adoption of the EU carbon tax system.¹⁵⁹ China has learned from the EU's experience to ensure the stable implementation of its

¹⁵⁸ David Vergun. "U.S. Should Not Surrender Clean Energy Technology to China, DOD Official Says" : <https://www.defense.gov/News/News-Stories/Article/Article/3140223/us-should-not-surrender-clean-energy-technology-to-china-dod-official-says/>. (accessed date. April. 9th 2023)

¹⁵⁹ 조정원, "중국에서의 환경정책 도입 및 확산의 실패와 한계-탄소배출권 거래를 중심으로," 『세계정치』 17 (2012), pp. 55-93.

carbon trading scheme, which is the foundation for the nationwide spread of the current carbon trading system. Since the EU–China Partnership on Climate Change was established in 2005, the bilateral relationship has been focused on developing technological cooperation and low-carbon technologies in the areas of energy use, coal, methane, and carbon.¹⁶⁰ This led to the development of a joint statement in 2010¹⁶¹, and in 2015¹⁶², the two sides issued a leader's statement¹⁶³. The 2018 EU–China Summit reaffirmed the commitment to implementing the Paris Agreement and pledged to strengthen cooperation in areas such as long-term low-emission gas development strategies, increased energy efficiency, low-pollution transportation, climate-related technology development, and investment and cooperation in climate and clean energy projects. In summary, the cooperation between China and the EU plays an important role in addressing climate change and promoting clean energy.

In particular, the US decision to withdraw from the Paris Agreement has strengthened the cooperative relationship between the EU and China in global environmental governance. Recent publications emphasize the economic arguments for EU–China

¹⁶⁰ EU, “EU and China Partnership on Climate Change,” https://climate.ec.europa.eu/system/files/2016-11/joint_declaration_ch_eu_en.pdf (accessed date: April 11th 2023)

¹⁶¹ EU, “Joint Statement on Dialogue and Cooperation on Climate Change,” https://climate.ec.europa.eu/system/files/2016-11/joint_statement_dialogue_en.pdf (accessed date: April 11th 2023)

¹⁶² EU, “EU–China Joint Statement on Climate Change,” <https://www.consilium.europa.eu/media/23733/150629-eu-china-climate-statement-doc.pdf> (accessed date: April 11th 2023)

¹⁶³ EU, “EU–China Leader’s Statement on Climate Change and Clean Energy,” https://climate.ec.europa.eu/system/files/2018-07/20180713_statement_en.pdf (accessed date: April 11th 2023)

climate cooperation, as well as market mechanisms such as emissions trading and energy security.¹⁶⁴ At the Copenhagen conference, China and the EU played a key role in bridging differences and complementing the EU's leadership in international climate governance. China's role has shifted from being a recipient or even denier of climate policies to a more active attitude toward climate change, and the US withdrawal has created a leadership vacuum that has allowed the EU and China to reposition themselves in global environmental governance and pursue bilateral cooperation.

The EU's European Green Deal, which was announced in 2020, aims to promote sustainable development and restore natural biodiversity by achieving carbon neutrality by 2050, reducing mobility emissions by 2030, and reducing energy consumption by 36–39%.¹⁶⁵ The EU intends to fulfill its Paris Agreement obligations, and this could encourage countries with cooperative or trading partnerships with the EU to reduce carbon emissions and strive for carbon neutrality.¹⁶⁶ China has also declared its intention to achieve carbon neutrality by 2060, and a cooperative relationship has been established between the EU and China through technology transfer and commitment fulfillment.¹⁶⁷ Continuous summits have

¹⁶⁴ Gurol, J., & Starkmann, A, "New partners for the planet? The European Union and China in International climate governance from a role-theoretical perspective," *JCMS: Journal of Common Market Studies*, 59(3) (2021), pp.518–534.

¹⁶⁵ European Commission, "Delivering the European Green Deal," https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/delivering-european-green-deal_en (accessed date: April 13th 2023)

¹⁶⁶ Min, Z., & Jialuo, G, "European Green Deal and the Prospects of EU–China Climate Change cooperation," *Global Economic Observer* 82 (2020)

¹⁶⁷ Christoph Nedopil Wang, "China and European Cooperation on Financing the 2060 Climate Goals," <https://greenfdc.org/china-eu-cooperation-on-financing-the-2060-climate-goals/?cookie-state-change=1681481598639> (accessed date: April 14th 2023)

been held to maintain global environmental governance, which is significant in addressing environmental issues.

As part of China's partnership with the EU to respond to climate change, the country is learning about the EU's energy production and consumption structure. By doing so, China can expect to enhance cooperation with the EU through carbon emission adjustments that meet EU internal export and entry conditions. This partnership can contribute to strengthening global environmental governance and advancing the development of clean energy technologies, as well as promote sustainable development and biodiversity restoration in both regions.

3.2. The Challenges of Environmental Cooperation between China and the EU

The EU has been actively encouraging China's participation in international environmental protection by facilitating technology transfer and knowledge sharing. However, recent developments have shown that the EU has employed measures such as the Critical Raw Materials Act (CRMA) to constrain China's influence. These actions not only impede China's progress in environmental and resource sectors but also limit its capabilities in global environmental governance. China's aspirations to safeguard the benefits of developing countries can act as a limiting factor in assuming a prominent role in global environmental governance.

An ongoing issue of countervailing duties persists between the EU and China, stemming from disagreements over energy and

environmental policies. With the United States exiting the Kyoto Protocol, European governments anticipated the implementation of tax adjustments on imports of products that do not meet the EU's energy and environmental standards in border tax adjustments related to energy and the environment.¹⁶⁸ The Solar Panels dispute is an example of this tension, as the EU accused China of dumping cheap solar panels on the European market and imposed countervailing tariffs in response.¹⁶⁹ The EU has expressed dissatisfaction with China's eco-friendly policies which has led to tension between the two entities. Each of Europe and China implemented Circular Economy (CE) domestically. However, there are criticisms that it is difficult to identify additional effects of CE policies because it is considered not related to pollution indicators such as CO2 emissions in China and CE policies.¹⁷⁰

Amid the Solar Panels dispute, negotiations between the EU and China on a bilateral investment treaty began in 2013 during the EU–China talks on "Green Growth." However, in the same year, the EU imposed countervailing tariffs on China over dumping issues. The contradictory actions suggest that the countervailing tariffs were driven primarily by economic concerns than by the EU's green

¹⁶⁸ Biermann, F., & Brohm, R., "Implementing the Kyoto Protocol without the USA: the strategic role of energy tax adjustments at the border," *Climate Policy* 4(3) (2004), pp.289–302.

¹⁶⁹EnergyTrend of TREND FOCE Corp., "EU ProSun Claims China Violates EU–China Solar Trade Agreement," <https://www.energytrend.com/news/20140606-6853.html> (accessed date: April 13th 2023)

¹⁷⁰ McDowall, W., Geng, Y., Huang, B., Barteková, E., Bleischwitz, R., Türkeli, S., ... & Doménech, T., "Circular economy policies in China and Europe," *Journal of Industrial Ecology* 21(3) (2017), pp.651–661.

growth targets.¹⁷¹

The EU and China are engaged in a competition for global gateways, with the EU's counterpart to China's Belt and Road Initiative (BRI) seeking to address the global investment gap and connect countries. In the climate and energy sectors, both sides are pursuing green initiatives for sustainable development and commitment to the Paris Agreement. The EU is leading the way in global climate change response through initiatives like the Africa–Europe Green Energy and the Global Green Bond Initiative¹⁷², while China is pursuing global climate change response and environmental protection through its Green Belt and Road Initiative.¹⁷³ However, it is noteworthy that the target countries of the Global Gateway and the Green Belt and Road Initiative overlap, including Pakistan, Nepal, and South Africa, and the EU and China are not working together on this.¹⁷⁴ This lack of cooperation creates competition between the two countries, and there is pressure on target countries to choose between China and the EU. As a result, this could potentially the competition between the EU and China could undermine efforts to address climate change and achieve sustainable development goals.

4. Summation

¹⁷¹ Goron, C, “Fighting against climate change and for fair trade: finding the EU’ s interest in the solar panels dispute with China,” *China–EU Law Journal* 6(1–2) (2018), pp.103–125.

¹⁷² Global gate: https://international-partnerships.ec.europa.eu/policies/global-gateway/climate-and-energy_en

¹⁷³ Green Belt and Road Initiative Center: <https://green-bri.org/belt-and-road-initiative-green-coalition-brigc/>

¹⁷⁴ Zhou, L., Gilbert, S., Wang, Y., Cabré, M. M., & Gallagher, K. P. (2018). Moving the green Belt and Road Initiative: From words to actions.

China, as the world's largest emitter of carbon dioxide, has been urged by the international community to reduce its emissions and has cooperated with other countries to that end. The US and the EU have pledged to meet international environmental obligations under the UNFCCC and have jointly developed ten action plans to address major areas such as air quality, biodiversity, and environmental education, with the aim of supporting the UN's sustainable development goals.¹⁷⁵

Despite China's efforts to implement eco-friendly policies and produce environmentally friendly goods, the country faces countervailing tariffs or safety guards by the international community due to dumping practices. Additionally, the US and the EU are dissatisfied with China's developing country status, which has hindered cooperation in global environmental governance.

The EU has taken the lead in establishing standards and transferring related technologies to China, as demonstrated by the creation of the European Union Emissions Trading System (EUETS) and the European Chemicals Agency (ECHA) to limit chemical use.¹⁷⁶ However, China's reluctance to give up its developing country status has led to dissatisfaction among other countries and hindered cooperation. If China wants to have greater influence in global environmental governance, it must take a more responsible attitude as a powerful country and relinquish its

¹⁷⁵ 안형기, 이진만, & 백형배, “글로벌 환경 거버넌스 구축 현황 및 과제-한중일 환경장관회의 (TEMM) 를 중심으로,” 『한국거버넌스학회보』 22(3) (2015), pp.463-482.

¹⁷⁶ Vogler, J, “The European contribution to global environmental governance,” *International Affairs* 81(4) (2005), pp.835-850

developing country status.

Chapter 5. Conclusion

Despite facing pressure from the international community, China has undergone significant changes in its environmental policy. It has transitioned from mere regulations to the establishment of ministerial-level departments and effective policy implementation. These internal developments not only demonstrate China's commitment to environmental protection but also serve as a showcase of its dedication on the global stage.¹⁷⁷ However, it is worth noting that China's prioritization of economic and industrial development, as well as its continued recognition as a developing country within the UNFCCC, limit its role in global environmental governance.¹⁷⁸

China's Green BRI initiative integrates eco-friendly elements, but its primary goal is to facilitate economic development and build energy production bases that emit carbon overseas. Moreover, China's claim of being a developing country exempts it from fulfilling carbon reduction obligations at the level of advanced countries, despite being the world's largest carbon-emitting country. Therefore, China's role in global environmental governance will only gradually increase if it achieves tangible results in carbon reduction and relinquishes its developing country status.

¹⁷⁷ Cao, H, "China and EU in Global Climate Governance: ideas, actions, differences and cooperation," *Chinese Journal of European Studies*, 2015(5)

¹⁷⁸ Teng, F, "Opportunities and challenges for China to lead global climate governance in the context of de Globalization Annual Report On Actions To Address Climate Change (2018): Gathering in Katowice" *Social Sciences Academic Press*, (2018)

Under the Belt and Road Initiative (BRI), China's approach to ASEAN revolves around infrastructure investment. To address concerns about environmental pollution and destruction resulting from these projects, China has introduced the concept of a Green BRI. Initiatives like the "One Belt, One Road Ecological Environment Protection Cooperation Plan" and the "Guidance Opinion on the Construction of Green One Road" were formulated in 2017 to emphasize environmentally friendly practices. The second One Road Forum in April 2019 further highlighted the importance of environmental considerations. The establishment of the "Green Investment Principle" aimed to create an international network that manages environmental and social risks in Belt and Road investments, receiving endorsements from 27 countries, including France, Singapore, and the UAE. The launch of the BR International Green Development Coalition aligns with the environmental sustainability principles of the Belt and Road Initiative and the UN Sustainable Development Goals.¹⁷⁹

While China is making efforts to respond to climate change by collaborating with the United States and the EU, several complex issues related to the economy and security hinder cooperation. Therefore, it is crucial to identify and address these obstacles to promote cooperation based on common environmental goals and to address external factors affecting such cooperation.

Additionally, this paper has some limitations due to the absence of

¹⁷⁹ Nakano, J, "Greening or greenwashing the Belt and Road Initiative," *Center for Strategic & International Studies*. (2019)

discussion on the global environmental regime beyond the UNFCCC and its focus solely on CO₂ emissions as pollutants. However, it remains meaningful as it engages in discussions regarding both domestic and foreign environmental policies.

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Abstract

<국문초록>

본 논문은 중국의 환경정책 변천과 글로벌 환경 거버넌스에 미치는 영향을 검토한다. 시간이 지남에 따라 중국의 환경적 접근 방식의 진화를 분석하고 탄소 배출 감소에 대한 효과를 탐구한다. 질문에 답하기 위해, 본 연구는 중국의 국민경제와 사회 발전 5개년 계획과 유엔기후변화협약(UNFCCC)의 당사국총회(COPs)와 같은 주요 국제 환경 회의에서 중국의 대응을 통해 중국의 대내, 외적 환경정책을 논의한다.

이에 중국이 환경 정책을 시행하면서 직면한 도전과 기회를 검토하고, 탄소 배출을 줄이는 데 있어 중국의 환경 정책 효과를 평가한다. 또한, 본 연구는 중국의 글로벌 환경 거버넌스 노력 참여의 중요성을 강조하고 있으며, 우리 시대의 시급한 환경 문제를 해결하기 위한 중국, EU, 미국의 협력의 중요성을 강조한다.

따라서, 글로벌 환경 거버넌스에서 중국의 역할이 중요함을 강조하면서 글로벌 환경 거버넌스에서의 중국의 변화 가능성을 예측한다. 본 논문은 중국의 변화하는 환경 전략에 대한 포괄적인 이해가 효과적인 글로벌 환경 거버넌스를 위해 필수적이라고 결론짓는다.

키워드: 중국 환경 정책, 중국 5개년 계획, UNFCCC COPs, 글로벌 환경 거버넌스

학번: 2021-22182