

NEAPOLIS UNIVERSITY PAFOS

CHINA'S RISE AS A GLOBAL POWER: A COMPREHENSIVE ANALYSIS OF CHINA'S INFLUENCE IN GLOBAL CLIMATE GOVERNANCE

GLADNESS MTUI

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A COMPREHENSIVE ANALYSIS OF CHINA'S INFLUENCE IN GLOBAL CLIMATE GOVERNANCE

Dissertation which was submitted for obtaining a Master's Degree in International Relations, Strategy and Security

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Abstract

While the global climate emergency is causing severe and irreversible consequences, governments around the world are hesitant to implement necessary policy measures to address this crisis, underscoring the urgent need for global action. This study delves into China's rise as a formidable global power within the realm of climate governance, and its contextualization amidst a broader shift in international environmental politics from government-centric to governance-oriented. The thesis examines the various facets of China's influence on the international scene, with a focus on how it shapes programs and policies meant to combat climate change. The research uses a combination of scholarly research, empirical data, and case studies to investigate China's approaches to climate governance and their effects on global efforts to mitigate climate change. In an effort to comprehend the complexities of China's diplomatic strategies and international policy choices, this paper follows the trajectory of China's participation in UNFCCC to current climate negotiations.

This thesis also assesses the influence of China's climate diplomacy on global collaboration and joint efforts to mitigate climate change. The study examines China's alliances, involvement in multilateral projects, and influence over international climate governance frameworks. Understanding China's rise to prominence in international climate governance and its transformation into a cutting-edge environmental state is made easier by this research. Notwithstanding the emergence of collaborative governance solutions, the study indicates that China's involvement in climate governance is contingent upon its ability to get political-economic resources or technical competence. This suggests that the democratization of environmental governance in China is still an impending objective.

Keywords: China, UNFCCC, Paris Agreement, International relations, climate diplomacy, green energy, climate change, global power, climate negotiations, multilateralism, low-carbon economy, energy transition, soft power, geopolitics, environmental policy.

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Finally, I hope that you will find my thesis to be a fascinating read and that you will gain an insight into climate diplomacy in China as well as the contemporary world.

Table of Contents

Abstract i

Acknowledgements ii

List of Abbreviations and Acronyms v

List of Tables and Figures viii

List of Major Conferences and Agreements ix

Chapter 1 1

Introduction: Context and Drivers of China's Climate Diplomacy 1

1.1 Introduction 1

1.2 Background of China's Climate Diplomacy 3

1.3 Motivations for China's Stance on Climate Change 6

1.4 Research Objectives 10

1.5 Research Questions 11

1.6 Literature Review 12

1.7 Research Methodology 14

1.8 Organization of Thesis 15

Chapter 2 17

The Evolution of China's Climate Diplomacy: A Literature Review 17

2.1 Introduction 17

2.1 China's Ascending Role in Climate Negotiations in the 1980s 18

2.2 China's Environmental Diplomacy and the Kyoto Protocol in the 1990s 20

2.3 China's Leadership in Clean Energy and the Paris Agreement in the 2000s 23

Chapter 3 29

China's Ambitions for a Low Carbon Economy 29

3.1 Introduction 29

3.2 China's Current Climate Goals 30

3.3 China's Progress Towards Renewable Energy 34

3.3.1 China and the BRICS Nations 38

3.3.2 Impact of BRICS Climate Change Cooperation 40

3.4 Challenges and Opportunities in Adopting Green Energy Technologies 42

Chapter 4 46

Implications of China's Climate Diplomacy 46

4.1 Introduction 46

4.2 Western Policy Implications for China's Climate Diplomacy 49

Chapter 5 54

Conclusion 54

Bibliography 57

List of Abbreviations and Acronyms

EJ	Exajoules
EU	European Union
EVs	Electric Vehicles
BRI	Belt and Road Initiative
BRICS	Brazil, Russia, India, China, South Africa
CBDR	Common But Differentiated Responsibilities
CCP	Chinese Communist Party
CDM	Clean Development Mechanism
CFSG	Climate Finance Study Group
CITES	Convention on the International Trade in Endangered Species
CH_4	Methane
CMA	China Meteorological Administration
CO_2	Carbon dioxide
COP	Conference of the Parties
COP-4	Fourth Conference of the Parties
COP-5	Fifth Conference of the Parties
COP-15	Fifteenth Conference of the Parties
COP-26	Twenty Sixth Conference of the Parties
COP-27	Twenty Seventh Conference of the Parties
CPC	Communist Party of China
ENGOs	Environmental Non-Governmental Organizations
ETS	Emissions Trading Scheme
FYP	Five Year Plan
G2	Group of Two
G20	Group of Twenty
G77	Group of Seventy Seven
GDP	Gross Domestic Product
GEF	Global Environment Facility
GFSG	Green Finance Study Group

GHG	Greenhouse gas
Gt	Gigatons
GW	Gigawatts
IDPs	Internally Displaced People
IMF	International Monetary Fund
INC	Intergovernmental Negotiating Committee
INDC	Intended Nationally Determined Contribution
IR	International Relations
KW	Kilowatts
MJ	Megajoules
MOFA	Ministry of Foreign Affairs
MRV	Measurability, Reporting and Verification
MtC	Metric tons of Carbon dioxide
NAMAs	Nationally Appropriate Mitigation Actions
NEVs	New Energy Vehicles
NCCCG	National Climate Change Coordination Group
NEPA	National Environment Protection Agency
NDC	Nationally Determined Contribution
NDRC	National Development and Reform Commission
NGOs	Non-Governmental Organizations
OECD	Organization for Economic Co-operation and Development
PBoC	The People's Bank of China
PJ	Petajoules
PRC	People's Republic of China
PV	Photovoltaic
R&D	Research & Development
RE	Renewable Energy
RMB	Renminbi
SEPA	State Environmental Protection Administration
SMA	State Meteorological Administration
SPDC	State Planning and Development Commission

SSTC	State Science and Technology Commissions
TWh	Terawatt hours
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNSC	United Nations Security Council
US	United States
USD	United States Dollar

List of Tables and Figures

List of Tables

Table 1. Strategic Industries in the 11th and 12th Five Year Plans……..…….….**19**

Table 2. China's major energy and emissions goals for 2015 and 2020…….. **45**

Table 3. China's prospective sources of renewable energy……...**49**

List of Figures

Figure 1. Energy consumption in China categorized by fuel type from 1980 to 2010…….…..**13**

Figure 2. China's carbon emissions from 1980 to 2018……...……..….**14**

Figure 3. Trends in China's Installed Solar and Wind Power Capacity (2015-2020).....**50**

List of Major Conferences and Agreements

Name of Agreement/Conference	Year
International Convention for the Regulation of Whaling	1946
Convention Concerning the Protection of World Cultural and Natural Heritage	1972
International Tropical Timber Agreement	1983
United Nations Framework Convention on Climate Change (UNFCCC)	1992
The Convention on Biological Diversity	1992
Rio United Nations Conference on Environment and Development	1992
Kyoto Protocol	1997
Marrakech Accord	2001
Copenhagen Conference	2009
Durban Conference	2011
Belt and Road Initiative	2013
Lima UN Climate Conference	2014
Paris Climate Agreement	2015

Chapter 1

Introduction: Context and Drivers of China's Climate Diplomacy

> 'Tackling climate change is a shared mission for mankind … Let us join hands to contribute to the establishment of an equitable and effective global mechanism on climate change, work for global sustainable development at a high level and bring about new international relations featuring win-win cooperation.'
>
> --President Xi Jinping

1.1 Introduction

The concept of climate change dates back to the 1800s and is attributed to human activity, particularly the combustion of fossil fuels, which impacts the earth's climate significantly. Among the major concerns that result from this are the heating of the atmosphere and oceans, which causes extreme weather events, rising sea levels, the spread of diseases, decreased agricultural output, and accelerated extinctions. The consequences will be dire and dangerous if governments and other stakeholders don't take significant action to reduce greenhouse gas emissions.

In the meantime, there have been significant worldwide repercussions from climate change, including an increase in the frequency of natural catastrophes, floods, and undernourishment. In 2018, 62 million people were affected by floods, and by 2017, the number of undernourished people had increased to 821 million. Furthermore, more than two million of the 17.7 million internally displaced people (IDPs) worldwide are a result of climate-related disasters. The number of people who were exposed to heat waves increased by 125 million between 2000 and 2016, and the average length of a heatwave was 0.37 days (Jiankun, Zheng & Xiliang, 2022). Due to natural emissions of carbon dioxide and other greenhouse gasses from shifting ecosystems, the effects of climate change, including global warming, may worsen even with interventions (Haris, 2019).

China and the US are the two countries that contribute the most to global climate pollution; in 2007, China surpassed the US as the world's top emitter of greenhouse gasses. China's greenhouse gas emissions have increased dramatically since 1990, more than doubling by the year 2018. According to China's first climate change white paper, "China's Policies and Actions for

Addressing Climate Change," the country is warming at a faster rate than the rest of the world and has seen a significant change in precipitation patterns over the past 50 years. More precipitation has fallen in the west and south of China, while less precipitation has fallen in the north and northeast of the country. Furthermore, there has been an observable increase in the occurrence and intensity of extreme weather events and disasters linked to climate change (Tan, 2016). As a result of China's growing crisis, the government aims to peak carbon emissions by 2030 and achieve carbon neutrality by 2060. To attain these goals, China is transforming its traditionally coal-dominated energy economy into one that emphasizes the use of renewable sources of energy. Recently, China has led the world in renewable energy, particularly solar and wind power, and has put ambitious climate policies into action (Heggelund, 2021, p. 10). This change is driven by both national policy and international commitments under agreements such as the Paris Accord.

The enduring concerns about nature and the environment lead logically to the field of climate diplomacy: an international regime based on national action is essential to effectively limiting the hazards associated with climate change. Examples of such institutions include the UNFCCC and a broader array of others. The purpose of climate diplomacy is to guarantee this regime's smooth operation and direct its expansion in order to tackle new issues (Chankova & Hristova, 2020, p. 194) .

The UNFCCC negotiations in the late 1980s and early 1990s aimed to prevent human-induced climate disruptions. Subsequent agreements include the Kyoto Protocol of 1997 and the Paris Agreement of 2015. Participating countries first raised concerns about justice and fairness, which led to an agreement on the necessity of just and equitable responses to the problems brought on by climate change. However, the concept of "common but differentiated responsibility," which gives industrialized nations more responsibility for addressing climate change as a result of their historical contributions, has been recognized despite being applied inconsistently. While it is argued that the wealthiest nations bear the greatest responsibility, it remains a matter of contention as to the precise allocation of responsibility, partly because some nations perceive newly industrialized nations like China as capable of taking on greater responsibilities (Haris, 2019, pp. 1-2).

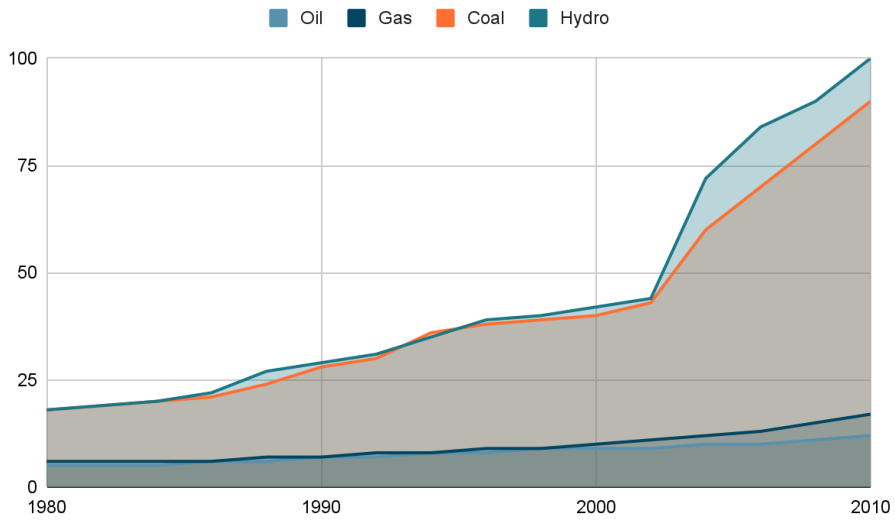
This chapter is organized as follows. The introduction covers the concept of climate change and its various effects on the environment. A brief background of China's climate diplomacy follows, describing how the country has moved away from its reliance on coal and toward

sustainable energy sources. The next section of the chapter delves into the factors that have influenced China's shifting position on climate change, both domestic and internationally. Lastly, it includes an overview of the research goals, research questions, literature review, research methods and thesis organization.

1.2 Background of China's Climate Diplomacy

The effect of global climate change can be observed both worldwide and in China, where the mean surface temperature has risen by 0.98°C over the past century. China's warming trend is somewhat greater than the global average. Some parts of the mainland saw rises in annual mean surface temperatures, especially in the 1920–40s and in 1985. The areas with the greatest increases were the northwest, the northern Qinghai–Tibetan Plateau, and Inner Mongolia (Tseng, 2015). China's Third Assessment Report predicts a temperature rise by the year 2100 of between 1.3 to 5°C, above the global average of 1 to 3.7°C, based on the most recent scientific data. In addition, an average sea level rise of 50 cm is predicted for coastal provinces (Tseng, 2015, p. 16).

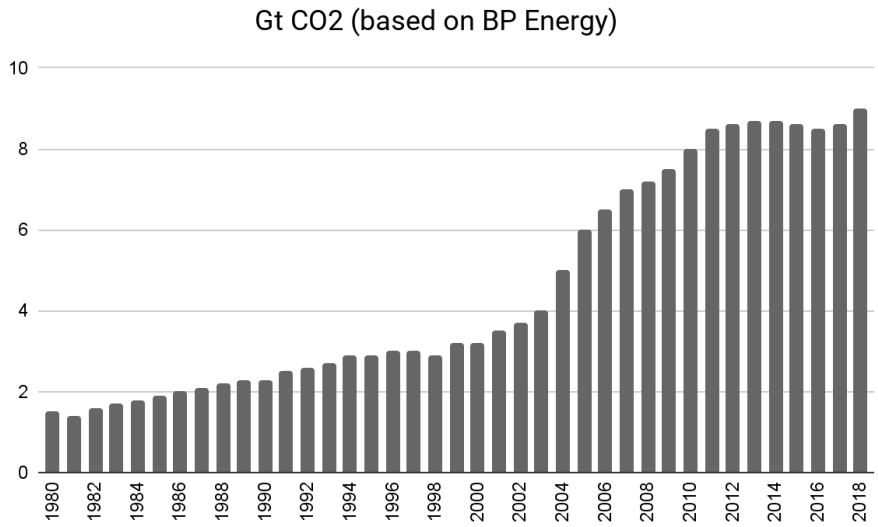
China's openness and economic reform has attracted manufacturing companies, enabling them to produce goods at lower costs. The 'Made in China' badge gained popularity in the 1990s and 2000s, allowing China to pursue its own infrastructure projects. As the world's top energy consumer and greenhouse gas emitter, China's reliance on coal-based energy necessitates the adoption of lower carbon-emitting technologies to stabilize the climate. This shift in focus highlights the need for sustainable energy solutions. Both oil consumption and the number of automobiles owned by Chinese citizens are rising in conjunction with the country's population growth (Paltsev et al., 2012, p. 215). Even though natural gas and hydropower are being used more frequently, they still only make up a small percentage of the nation's total energy needs (see Figure 1).



Source: Figure 1 in S. Paltsev et al. "The Role of China in Mitigating Climate Change" (2012).

Figure 1. Energy consumption in China categorized by fuel type from 1980 to 2010.

Consequently, in 2006 China overtook the United States as the largest emitter of greenhouse gasses (see Figure 2). China's carbon emissions in 2018 accounted for 28.5% of global emissions, or 9.4 gigatons (Gt). The manufacturing, building, and transportation sectors accounted, respectively, for 64.3%, 18.7%, and 11.9% of the total end-use CO_2 emissions in 2016, making them the primary contributors to these emissions (Qi, Zhao & Stern, 2020).



Source: Figure 7.1 in Y. Qi, X. Zhao, & N. Stern, "Climate policy in China: an overview" (2020).

Figure 2. China's carbon emissions from 1980 to 2018.

As the world's biggest energy consumer and greenhouse gas (GHG) emitter, China has made considerable changes to its climate change policies. Following the 1992 United Nations Conference on Environment and Development (UNCED),[1] China developed its national climate change policies. However at first, the government was hesitant to put these plans into action due to concerns that they may impede economic growth (Du, 2011). Prior to the 11th Five-Year Plan (FYP), China had very minimal policies relative to renewable energy and very low to no targets for energy efficiency. Nonetheless, China focused a great deal of attention on energy efficiency, renewable energy, and pollution control targets throughout the 11th FYP period (2006–2010). China has therefore opened up new markets for renewable energy and is presently striving for a 17% decrease in CO_2 intensity between 2011 and 2015.

Additionally, China has changed its position internationally and established a goal to reduce carbon intensity by 40–45% by 2020 (Boyd, 2012). Critics however, pointed out that the 11th Five-Year Plan's emphasis on energy efficiency exposed shortcomings in conventional command-and-control techniques. In response, the 12th FYP placed a strong emphasis on market-based initiatives for low-carbon, ecologically friendly, and sustainable development. In spite of this, local governments and state-owned businesses backed by vested economic interests continued to provide beneficial policies in favor of the coal industry (Heggelund, 2021, p. 12).

In the context of the Copenhagen climate conference, China has drawn criticism for its perceived obstructionist stance, which prioritized national interests and emphasized the voluntary nature of Nationally Appropriate Mitigation Actions (NAMAs).[2] China persisted in drawing a division on climate responsibility between those that are listed in Annex I and those that are not. In addition, China came under fire for sending government delegates to negotiate the Copenhagen Accord rather than heads of state; People's Republic of China (PRC) delegates were charged with deleting important passages from the agreement (Horvli, 2020). The international community generally considered the Conference to be a failure, characterizing it as a political accord that had no legal force under the UNFCCC. China's apparent failure in Copenhagen has been attributed to

[1] The United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit, held in Rio de Janeiro in 1992, brought together world leaders to discuss and enhance global environmental protection and sustainable development projects.

[2] Nationally Appropriate Mitigation Actions (NAMAs) are climate change mitigation measures that are adapted to each country's unique sustainable development priorities and capacities in order to achieve emission reductions in accordance with national commitments under international agreements.

the delegation's coordinated efforts and attempt to meet new climate targets while remaining committed to its prior position of avoiding international obligations (Horvli, 2020, p. 23).

As a result of criticism expressed following the Copenhagen climate conference, China has altered its approach to international climate negotiations. China took a more positive stance during the 2011 Durban Conference, agreeing to the creation of a legally-binding climate framework by 2015 (Horvli, 2020, p. 23). In addition, China introduced emission limits in a few places in 2013 as part of an experimental carbon trading program. Climate change mitigation has become a more aggressive priority in China since 2007, incorporating changes into the country's economic strategy. Notably, 2014 marked the height of official discourse on climate change (Du 2011, p. 2).

1.3 Motivations for China's Stance on Climate Change

Throughout this section, we explore China's leadership in renewable energy markets, economic growth imperatives, environmental concerns associated with public health, and strategic goals for international reputation in order to evaluate the factors that led to its significant transformation in energy reform and climate change mitigation efforts. A better understanding of these insights can help shed light on the motivations behind China's evolving stance on climate change and its efforts to transition to a more sustainable energy future amid both domestic and international pressures.

As a nation grappling with the dual challenges of rapid economic growth and environmental sustainability, China's stance on climate change has garnered significant attention on the global stage. China represents the concerns of poor countries by actively participating in UN climate change negotiations and regularly working with the G77. Chinese negotiators emphasize that wealthy nations must keep their promises to reduce emissions, provide financial support, and transfer technology in order for developing nations to fulfill their obligations. The principle of "common but differentiated responsibilities" recognizes that developed nations, which have traditionally been significant emitters, have a greater responsibility for reducing emissions and supporting developing countries with financial and technological assistance. However, China maintains that higher emissions are required to promote industrial and economic development as well as reduce poverty, even despite its recent noteworthy economic progress (Heggelund & Buan, 2009, p. 305). China's rapid industrial growth and reliance on fossil fuels have therefore resulted in a significant increase in emissions (Heggelund 2009, p. 306).

China currently holds the leading spot in the world market for renewable energy in terms of installation and investment, accounting for more than one-third of the total in 2015. China's domestic renewable energy investment jumped to $126.6 billion USD by 2017, accounting for over 45% of global investment in this field. In 2017, renewable energy sources accounted for 21.9% of China's total installed power capacity, with renewable energy accounting for an astounding 58.4% of newly installed capacity. Of these new installations, solar photovoltaic systems made up 43%, and wind capacity made up 15%. Investment in renewable energy has increased dramatically, from 13% in 2005 to an astounding 77% in 2017 (Qi, Zhao & Stern, 2020, p. 78). In order to align China's climate policies domestically as well as internationally, it is important to identify both conventional and emerging factors that affect China's approach to climate policy.

The public's knowledge of the negative effects of pollution and climate change on health has increased as a result of the extreme environmental deterioration and air pollution in Chinese cities. More and more people are demanding that environmental laws be strengthened and that more be done to halt climate change. China's efforts to decrease greenhouse gas emissions are driven by potential benefits from reducing other pollutants, particularly by transitioning from coal-based energy production. China's energy output has significant negative effects on the environment and human health that might cost billions of dollars a year. According to research, there are between 400,000 and 750,000 Chinese deaths per year from factors related to air pollution (Vandenbergh, 2008, p. 921). A 2004 study on "Green G.D.P."[3] suggests that environmental damage might have caused China's growth rate to drop from 10% to 7%, and accounting for these damages could have led to a growth rate that was negative. In addition, China has internal discontent brought on by pollution that goes beyond greenhouse gasses and poses health risks. The recent issue over air quality during the 2008 Olympic Games and the Chinese government's response serve as an example of the influence of international pressure resulting from local environmental situations (Vandenbergh, 2008, p. 921).

[3] Green GDP is a measurement of economic growth that takes into consideration environmental impacts by subtracting degradation and resource depletion costs from GDP in order to accurately reflect sustainable economic growth.

Additionally, the "capping coal approach"[4] was adopted as a way to reduce air pollution because of the growing public concern and emphasis on sustainable development. This was particularly true in the years 2013 and 2014 when smog and ultrafine particles in northern China reached dangerous levels. In response, the Yangtze River Delta, the Pearl River Delta, and the Beijing-Tianjin-Hebei area were among the priority locations targeted by the Air Pollution Action Plan (2013-2017) released by the State Council. In 2014, this program sparked a revolution in the energy sector that was consistent with the idea of the "New Normal" (xin changtai), which emphasizes controlled growth and sustainable economic development (Heggelund, 2021, p. 12).

China's leadership is shifting the economy from investment to domestic consumption due to rising input costs and concerns about falling into the middle income trap. Social stability and the credibility of the Communist Party are seen as being threatened by this shift. Chinese policymakers hope to reduce the dangers associated with this transition by focusing on high-tech industries and efficient markets in their vision of the future economy (Williams, 2014). Economic growth is the primary motivator behind climate change action, as market dynamics create a positive relationship between national development and carbon markets (Li, Pattberg & Widerberg, 2023, p. 382). Furthermore, policymakers view green growth as a potential opportunity, recognizing the potential of low-carbon industries and striving to establish a strong presence in the global low-carbon market. China's 12th Five-Year Plan reorganized China's strategic industries to prioritize high-value growth sectors, such as low-carbon goods and services, in keeping with this objective (Williams, 2014, p. 17). By the end of the 12th Five-Year Plan, China hoped to increase the share of GDP by strategic industries from approximately 3% to 8% by 2015 and 15% by 2020 (see Table 1).

Table 1. *Strategic Industries in the 11th and 12th Five Year Plans*

Strategic Industries: 11th Five Year Plan	**Strategic Industries: 12th Five Year Plan**
National Defence	Energy saving and environmental protection
Telecommunications	Next generation information technology
Electricity	Biotechnology

[4] The capping coal approach limits coal consumption in order to reduce greenhouse gas emissions, promote cleaner energy sources, improve air quality, and contribute to sustainable development.

Oil	High-end manufacturing (aeronautics, high speed rail)
Coal	New energy (nuclear, solar, wind, biomass)
Airlines	New materials (special and high performance composites)
Marine Shipping	Clean energy vehicles (plug-in hybrid electric and electric cars)

Source: Table 2 in L. Williams, "China's climate change policies: actors and drivers" (2014).

The need to project a favorable image abroad, which is essential for its expanding economy, is the third major motive behind China's climate change initiatives. China is highly sensitive to perceived coercion and unfair treatment, recognizing the importance of fair agreements and actively working to gain respect in international negotiations (Williams, 2014, p. 18). During the early 1990s, China participated in the UNFCCC process to present itself as a responsible international player amid concerns about international isolation and the negative effects on its export-oriented economy. China aimed to reduce emissions and avoid external mitigation costs threatening its economic development. Balancing these objectives was challenging, but China argued for climate justice, citing developing nations' entitlement to economic development unhampered by ecological responsibilities. This led to China becoming a key advocate for climate justice and championing the common but differentiated responsibilities principle. However, the dramatic rise in China's CO_2 emissions has made it difficult to balance its participation with its responsibility as a stakeholder. As a result, China's traditional role of guarantor and beneficiary of the right of the developing world to develop has been called into question (Conrad, 2012, p. 442).

China is putting a lot of emphasis on climate change in its environmental diplomacy, hoping to protect its interests domestically and contribute positively to global climate regulation. The Chinese government views climate change as a global concern prompted by outside influences. China recognizes the need to move toward a low-carbon economy in order to transition to a green economy as the effects of climate change grow more severe. Vandenbergh in his 2008 article assumed that by 2020, China will have developed a comprehensive climate change policy framework that includes tax and power sector changes, economic incentives, regulatory measures,

low-carbon programs, administrative directives, and research and development policies (Qi, Zhao, & Stern, 2020, p. 82). In response to the Kyoto Protocol and the post-Kyoto negotiations, China has continued to invest in low-cost, high-emission coal-fired electricity generation, rejecting national greenhouse gas reduction limits, and leading the opposition to mandatory limits among the developing countries (Vandenbergh, 2008, 923).

Based on these primary drivers of China's climate diplomacy, we have seen notable progress in leadership and renewable energy investment. China's strategic shift towards high-tech industries and efficient markets underscores economic imperatives, sensitivity to global perceptions, and advocacy for climate justice while its significant investments in renewable energy and transition from coal-based sources demonstrate China's commitment to reducing greenhouse gas emissions and public health concerns. Finally, China's emphasis on projecting a positive international image and advocating for climate justice shows its sensitivity to global perceptions.

1.4 Research Objectives

This thesis specifically analyzes China's ascent as a global power by tracing the evolution of China's climate policy and highlighting China's key motives for its stance on climate change. The paper methodically presents both existing and predicted climate change research in China, as well as the actions China plans to take in order to mitigate these changes and how this serves as an opportunity to strengthen Chinese soft power..

This thesis aims to achieve three goals. The main objective is to define climate diplomacy and evaluate China's evolving climate diplomacy strategies since the establishment of the United Nations Framework Convention on Climate Change. Despite previous indications of unregulated expansion in both energy consumption and greenhouse gas (GHG) emissions, China's journey toward energy reform and attempts to combat climate change are driven by fundamental reasons. In this paper, we discuss China's foreign policy and the factors that influence its international climate policy formulation. Particular attention will be paid to the way in which it maneuvers in relation to other countries and the role it plays as a global actor in global climate policy development.

The second goal of this thesis is to analyze China' ambitions towards developing a low carbon economy by 2060 and adopting the use of green energy technologies through its domestic climate policies. The paper will examine how China has developed its climate diplomacy strategies

in light of different international constraints and considerations, highlighting how crucial it is to comprehend these dynamics for efficient global climate governance. To achieve this goal, it will be necessary to analyze China's climate diplomacy and its involvement in international climate negotiations from the 1980s, 1990s, and 2000s to the present, emphasizing the challenges and opportunities that China has faced throughout this period of time.

Finally, a number of scholars, including Green & Stern (2015), Belis et al. (2015), and Joergensen (2019), have highlighted the implications for China's climate diplomacy, including US and EU policy implications for China's climate diplomacy. Therefore, the third goal of the thesis is to examine the effects of China's climate diplomacy, including shifts in the use of renewable energy while curbing over-dependence on fossil fuels, and how external pressure from the West influences China's climate diplomacy. The overall objective is, by combining the findings from earlier chapters, to present an overview of how China's global climate diplomacy initiatives might shape more comprehensive plans for addressing climate change on an international scale.

The study will focus on the time period associated with critical international climate change agreements, ranging from the pre-UNFCCC to the Paris Agreement. During this time period, China's climate change policies underwent a substantial transition.

1.5 Research Questions

This research focuses on China's evolving climate diplomacy as a leading factor in the country's rise as a global power. Thus, the purpose of this study is to use case study research methodology within the context of theory development to investigate both the evolution of China's climate diplomacy as well as the influence of various domestic and external factors on how it formulates its climate diplomacy.

Xi Jinping's statements signaled to the international community that China is willing to participate in tackling global climate change, a shift from previous uncertainty during COP15 in Copenhagen. Given that China sees the climate challenge as inextricably linked to its development ambitions, the study tries to investigate China's developmental perspectives and actions in this context. Therefore, specific questions will be answered in the thesis:

1. What factors have been pivotal in prompting this significant transformation in China's stance towards energy reform and efforts to mitigate climate change?

2. In light of international limits and concerns, what are the main opportunities and problems China confronts in implementing its climate policies?

To address the second research question, two subsidiary questions have been formulated as the basis for the analysis.

-In what ways is China's climate diplomacy strategy different from other nations, and how does it navigate diplomatic challenges in order to achieve its climate goals?

-What are the implications of China's environmental diplomacy for its overall geopolitical and economic ambitions as a global power?

3. Taking into consideration the challenges associated with financial resources and administration, how can China overcome its shortcomings in environmental sustainability and effectiveness of climate policies? Is China leveraging international agreements and partnerships to advance its climate agenda, and what role do they play in shaping its approach to climate governance?

This study delves into China's climate change politics, examining how the country responds to perceived climate challenges both internally and internationally. By comparing different case studies, the thesis focuses on the discourse of sustainable development, which has greatly influenced Chinese domestic and foreign policy regarding climate change.

1.6 Literature Review

China's climate policies are projected to have a large impact on global climate policy, given its robust economic development, coal-dominated energy system, and significant emission base. This section delves into research on China's climate change policy following the Paris Agreement and identifies gaps in current literature, with a focus on the expanding phenomenon and measures conducted by both state and non-state actors.

China and the United States have emerged as the primary contributors to global climate pollution, with China in 2007 surpassing the US as the leading emitter of greenhouse gasses. This shift highlights the urgency for China to address its environmental impact, evident in its doubling

of greenhouse gas emissions since 1990. Documented shifts in precipitation patterns and increased occurrences of extreme weather events underscore the pressing need for China's response to climate change (Heggelund, 2021). In China, the effects of global climate change are evident, with observable increases in mean surface temperatures over the past century, surpassing the global average. Projections from China's Third Assessment Report paint a sobering picture of future climate scenarios, anticipating further temperature rises and sea level increases by the year 2100, with coastal provinces facing particular vulnerability (Tseng, 2015).

Despite these challenges, China has become a global leader in renewable energy, particularly in solar and wind power, implementing ambitious climate policies to mitigate its environmental footprint while fostering sustainable economic growth (Heggelund, 2021). Climate diplomacy assumes a critical role in navigating the complexities of international cooperation on climate change, with the UNFCCC serving as a cornerstone for global dialogue and action. Beyond the UNFCCC, various international institutions and agreements contribute to the collective effort to combat climate change, emphasizing the need for collaborative strategies to address this pressing global challenge (Chankova & Hristova, 2020).

China actively participates in UN climate change negotiations and collaborates with G77, advocating for developed nations to fulfill emissions reduction, financial support, and technology transfer obligations for developing countries (Heggelund & Buan, 2009). China maintains that higher emissions are required for industrial development and poverty alleviation despite significant economic gains, based on the principle of common but differentiated responsibilities (Heggelund, 2009). Increasing public awareness of pollution's health impacts has catalyzed demands for strengthened environmental laws and climate action, driven by extreme environmental degradation and air pollution in Chinese cities (Vandenbergh, 2008). China's efforts to curb greenhouse gas emissions are motivated not only by climate concerns but also by the secondary benefits of reducing other pollutants, despite challenges posed by its reliance on fossil fuels and industrial growth. Additionally, China's economic strategy is shifting towards domestic consumption and high-tech industries, aiming for sustainable development and green growth, as outlined in its 12th Five-Year Plan. (Williams, 2014). However, balancing economic imperatives with environmental responsibilities presents ongoing challenges, raising questions about China's role in global climate governance and the extent of its commitment to climate justice principles.

Research on China's renewable energy adoption is extensive, but there is a lack of understanding about non-financial aspects like staff knowledge and training deficiencies (McBeath & Wang, 2008). The insufficient research on non-financial aspects hinders the development of effective policies and strategies to promote renewable energy adoption, thereby preventing a comprehensive understanding of potential challenges. Furthermore, there is an absence of thorough research on the dynamics of global cooperation, especially when it comes to US-China relations after the US withdrew from the Paris Agreement in 2020. Comprehending the ways in which geopolitical variables and bilateral ties impact China's climate diplomacy can yield significant understanding of the wider context of global climate governance and guide the development of tactics aimed at promoting international collaboration on climate change adaptation and mitigation initiatives.

1.7 Research Methodology

This thesis aims to answer three research questions. The first research question is related to the shift in China's stance on climate change, shedding light on the underlying reasons guiding China's trajectory towards energy reform and climate action. The second research question examines the potential and difficulties China confronts in putting its climate policy into practice. It aims to explore the different restrictions, issues, and elements that affect China's capacity to manage climate change while balancing its international relations. Finally, the third research question is centered on overcoming challenges in climate diplomacy, addresses critical barriers identified by researchers and illustrates how China plans to navigate these obstacles at both domestic and international levels. It also aims to investigate how China uses its connections with other nations and international organizations to further its climate agenda through various techniques and tactics.

To address these questions, I employ a structured, focused comparative approach (George 1979), which is based on the analysis of three cases: (a) China's ascending role in climate negotiations during the 1980s; (b) China's environmental diplomacy and the Kyoto Protocol in the 1990s; and (c) China's leadership in clean energy and the Paris Agreement in the 2000s.

These cases were selected because each case marks an important *turning point* in China's climate policy landscape, allowing a thorough examination of the policy's historical development.

The rationale behind this selection lies in the comparative approach's ability to define patterns, shifts, and continuities in China's climate policy. Each case study offers insights into the contextual factors, decision-making processes, and policy outcomes that influenced China's position on climate change. By sequentially analyzing these case studies, we gain a nuanced understanding of how previous successes and failures have influenced subsequent policy directions. The insights derived from earlier periods guide the formulation of policies in subsequent periods, contributing to a holistic comprehension of China's evolving role and strategies in addressing climate change.

A thematic content analysis is used in this study to carefully examine the data acquired from the case studies. Every case is methodically subjected to the same set of questions—defining the aspects on which the research aims to focus—thus providing for the comparability of the cases.

Hence, the analysis is guided by the following set of questions:

1. What was China's climate policy during the period under examination?
2. Why did China choose this particular policy?
3. What was the response in the international community to China's policy during the time period?
4. What was the outcome of the policy in terms of objectives set?

Finally, I will analyze the results in relation to the goals and research questions by examining how the findings affect theory, practice, and policy. I will also offer recommendations for future studies and policy development, based on the knowledge gathered from the case study analysis.

The thesis predominantly relies on textual data sourced from secondary sources, publicly available policy statements, proceedings of COPs and UNFCCC climate negotiations, academic journals, books, newspapers, and academic publications to examine climate diplomacy.

1.8 Organization of Thesis

This thesis is organized as follows. Chapter 1 introduces the context of China's climate diplomacy, focusing on its motivations and the political, economic, and environmental factors

influencing its approach. The evolution of China's climate diplomacy from pre-UNFCCC to post-UNFCCC era is examined in Chapter 2 of the literature review. This chapter explores how China went from being reluctant to participate in international climate negotiations in the 1980s and 1990s to actively doing so in the 2000s. During this period, China increased efforts to achieve its emission targets and submitted a greater number of Nationally Determined Contributions.[5] The third chapter of this thesis examines China's efforts to transition to a low-carbon economy, with a focus on how it uses renewable energy, such as solar and wind power, to meet emission targets. While addressing the potential and obstacles faced in these efforts, it also emphasizes how effective renewable energy is in supporting China's emission reduction targets. In the final chapter, we will discuss the Western implications of China's climate diplomacy, particularly US and EU initiatives that are prominent in climate negotiations. Additionally, we will examine potential future paths in energy and climate development for China from 2020 to 2060 and propose recommendations for strengthening China's participation in climate action.

[5] The Nationally Determined Contributions (NDCs) are the pledges made by countries in accordance with the Paris Agreement, describing how they will reduce greenhouse gas emissions and enhance climate resilience.

Chapter 2

The Evolution of China's Climate Diplomacy: A Literature Review

2.1 Introduction

This extensive literature review describes China's changing approach to climate diplomacy in three different time periods: industrialization and early environmental initiatives in the 1980s; economic priorities and global environmental responsibilities in the 1990s; and ratifying the Kyoto Protocol and promoting renewable energy in the 2000s while supporting developing countries. Throughout these decades, China's environmental policies have encountered mixed international reactions, acknowledged both for its participation in global environmental frameworks as well as criticism for perceived discrepancies in rhetoric and action. This chapter first briefly discusses the background of China's energy policies before the 1980s, then follows with a detailed overview of how China has gradually incorporated climate concerns into its developmental plan, which has shaped its changing position in international climate diplomacy.

Beginning in 1949, Mao Zedong placed a strong emphasis on industrialization and economic expansion, particularly securing primary energy supplies, which led to the Ministry of Fuels and Power overseeing energy production after China's civil war in the 1950s. However, due to the rapid expansion and diversification of the economy, this ministry was disbanded in 1955 (Zhao, 2001). The State Council then established multiple specialized ministries to take its place, including the Ministry of Coal Industry, the Ministry of Petroleum Industry, and the Ministry of Electric Power Industry. In the 1960s, the Cultural Revolution significantly impacted China's institutional structures, resulting in the merger of the Ministry of Coal, Petroleum, and Chemical Industries into the Ministry of Fuels and Chemical Industries. China's capacity to maintain sufficient energy supplies for development was hampered by this action, which decreased coal production. Due to the energy sector's poor performance, the initial reform was subsequently scaled down, and by 1975, the central government had taken back control of the largest energy enterprises (Fuqiang et al., 1992).

China then launched its environmental protection program in the 1980s, and as a result, several rules and regulations encouraging energy conservation and climate change mitigation have been put into place. These actions demonstrate China's commitment to environmental protection (Chmutina, 2010). Subsequently, China's formal involvement in global climate negotiations has undergone three distinct phases: the 1980s, the 1990s, and the 2000s–present.

I have selected the three phases in order to critically analyze China's shifts in climate diplomacy and environmental policy over time. During the 1980s, environmental measures were first implemented amid rapid industrial growth, demonstrating a conservative yet foundational approach. The 1990s reveal a delicate balance between global environmental responsibilities and economic priorities. Finally, throughout the 2000s, China has shown an evolving, yet still cautious, global stance, including significant investments in renewable energy technology.

2.1 China's Ascending Role in Climate Negotiations in the 1980s

In this section, we critically examine China's evolving role in climate negotiations during the 1980s. We discuss China's early commitment to international environmental agreements and the rapid industrial growth under Deng Xiaoping that contributed to significant environmental problems, causing China to adopt measures to reduce carbon dioxide emissions and improve energy efficiency.

With about 21.5% of the world's population, China has experienced significant economic growth since enacting economic reforms and implementing an open door policy in 1978. China's rapid economic growth, characterized by an average annual GDP growth rate of 10%, is largely attributed to its reliance on coal as the dominant energy source, accounting for a significant portion of its energy consumption. At the same time, CO_2 emissions have increased significantly, rising from 358.60 MtC in 1980 to 847.25 MtC in 1997 (Zhang, 2000, p. 590).

Various reasons influenced China's decision to participate in international climate negotiations throughout the 1980s. China has participated extensively in international agreements, especially those pertaining to the protection of vulnerable and endangered species. Pan et al. (2019) suggest that climate change, when combined with habitat loss and fragmentation, will synergistically intensify the decline of biodiversity at species, genetic, and habitat levels. Despite China's commitment to protecting endangered species by joining CITES in 1981 and banning their trade in 1993, economic growth has led to a rise in wildlife trafficking. China's involvement in

international environmental agreements, such as the International Tropical Timber Agreement and the Convention for World Cultural and Natural Heritage, highlights a complex approach to environmental protection (McBeath & Wang, 2008, p. 2).

Moreover, China's rapid economic, urban, and industrialization under President Deng Xiaoping led to severe environmental problems, particularly due to over-reliance on coal for electricity production, causing significant air and water pollution. Nonetheless, efforts to reduce energy intensity helped to reduce CO_2 emissions. Since the 1980s, China has implemented thirty energy-related regulations and reduced coal and gasoline subsidies to boost energy efficiency, highlighting the country's challenges in balancing economic growth and environmental sustainability. In 1988, the Environmental Protection Commission established the National Climate Change Coordination Group to assist China in international climate change negotiations. Important organizations including the Ministry of Foreign Affairs (MOFA), State Meteorological Administration (SMA), National Environmental Protection Agency (NEPA), and State Science and Technology Commission (SSTC) were represented in this group (Chmutina, 2010, p. 1).

Taking energy conservation as a strategic priority within its energy policy during this period, the Chinese government adopted the principle of 'equal treatment to development and conservation with immediate emphasis on the latter' (NDRC, 2007). This goal was achieved through the adoption of the Energy Conservation Law, the creation of customized conservation plans, and the application of other laws pertaining to economics, technology, standards-setting, and fiscal management. Furthermore, the promotion of research and development, demonstration projects, importation of advanced technologies, establishment of innovative energy conservation mechanisms, and critical initiatives were all implemented (NDRC, 2007, p. 8).

Research by Ying & Jin (2018) reveals that China's adoption of environmental protection laws and the introduction of Provisional Regulations in the 1980s led to the establishment of building energy efficiency norms. This legislative framework improved theories and practices related to sustainable development, paving the way for significant advancements in China's approach to environmental sustainability in the construction sector (Zhang, Khang & Jin, 2018, pp. 10-12). However, scholars such as Xin-gang et al. (2020) highlight China's energy conservation policies' shortcomings, citing insufficient information and lack of motivation among the private sector. Comparing energy efficiency of European Union member states offers practical insights.

In 1989, China began a forty-project initiative to study climate change, involving about twenty ministries and approximately five hundred scientists. However, until the 2000s, this project did not significantly spark political momentum for national or international activities. China's position on the global climate framework has evolved over the course of four distinct phases: passive but supportive in the beginning (1990–1994); skeptical and reactionary in the following years (1995–2001); active participation in the middle of 2002–2006; and, since 2007, a more proactive engagement strategy (Tseng, 2015).

Overall, China's response to climate diplomacy in the 1980s has primarily been cautious, largely due to its emphasis on economic interests and rapid industrialization. This cautious approach has limited China's role in global climate governance. As a result, the international community has reacted differently to China's engagement in climate affairs during this period. While some countries welcomed its recognition of environmental concerns and its early steps in addressing climate change, others expressed skepticism. Research published by Oxford Institute of Energy Studies points out that in 1988, increasing scientific evidence on climate change led prominent politicians, such as UK Prime Minister Margaret Thatcher and US Senator Al Gore, to advocate for action. As a result, China began implementing market-based reforms during the 1990s that led to its participation in the UNFCCC negotiations (Oxford Institute of Energy Studies, 2022). As the most populous country in the world and a major emitter of greenhouse emissions, China was expected to take a more active role in international climate negotiations in the 1980s. However, because many other nations were still occupied with their own internal environmental concerns, China's modest initiatives did not elicit strong reactions or calls for further involvement from other nations.

2.2 China's Environmental Diplomacy and the Kyoto Protocol in the 1990s

China's impact in international climate talks was limited in the 1980s due to its cautious approach to environmental diplomacy and primary focus on economic expansion, as was evident in the previous section. On the other hand, a notable change occurred in the 1990s when China increased its level of participation in climate talks. We will examine China's proactive responses to the problems of rapid development and environmental degradation during this decade.

The emergence of climate change as a policy concern in China stemmed from international influences, particularly with the decision in 1989 to engage in international negotiations for a

framework convention. At first, the Chinese government viewed climate change policy mainly from a scientific perspective and categorized it mainly as a foreign policy issue (Stensdal, 2014, p. 115). In the 1990s, China's environmental diplomacy shifted as it addressed the dual challenges of rapid development and environmental degradation, becoming a major player in international negotiations on climate change.

The 1992 Rio de Janeiro Earth Summit established a global standard for sustainable development, dividing developed and developing countries, and giving wealthier nations the lead in environmental preservation. The Earth Summit resulted in the adoption of the Convention on Biological Diversity, the UNFCCC, and Agenda 21, a comprehensive plan for global sustainable development (Berkelaar, 2018). The UNFCCC initiated the Conferences of the Parties (COP) to promote agreements on reducing greenhouse gas emissions, but due to differing interests among participating countries, concessions are often required during these meetings (Berkelaar, 2018, p. 11).

Premier Li Peng emphasized at the UN Conference on Environment and Development in 1992[6] the need to put economic development ahead of environmental conservation when the two are in conflict (Stensdal, 2014, p. 5). In contrast, Lewis (2013) offers an alternative perspective, suggesting that Chinese Premier Li Peng's emphasis on economic development as central to environmental protection and his advocacy for international cooperation while preserving national sovereignty actually set the stage for a more cautious and self-interested approach to China's environmental diplomacy.

In the 1990s, China's oil imports surged, leading to increased academic studies on energy security and dependence on oil imports (Boyd 2012, p. 4). Scientists significantly contributed to China's early climate change efforts, initiating two national research initiatives between 1991 and 1995 to investigate impacts and reduce uncertainties. Ye Dunzheng, Chairman of the Chinese National Committee for the International Geosphere-Biosphere Program, drove these initiatives both locally and internationally. Further institutionalization came in 1990 with the establishment of the National Climate Change Coordination Group (NCCCG), which was charged with coordinating climate policy and efforts between ministries (Lai, 2021, p. 80).

[6] The 1992 Rio de Janeiro Earth Summit resulted in the adoption of the UNFCCC and the Convention on Biological Diversity, which address global environmental and development issues.

China supported the general framework convention without specific requirements and opposed specific targets in 1991's Intergovernmental Negotiating Committee negotiations, leading in promoting developing countries' unity against wealthy state pledges. Zhang's (2006) article highlights China's shift from initial opposition to specific targets and sovereignty emphasis to a more cooperative approach during negotiations towards the Kyoto Protocol. According to the author, China's climate diplomacy adopted more cooperative tactics and concessions, driven by practical considerations and a willingness to support certain commitments (Zhang, 2006, pp. 14-35). China's negotiating position focused on issues including scientific uncertainty, defending national sovereignty, emphasizing industrialized countries' historical responsibilities, and pushing for the transfer of funds and technology to developing countries (Chmutina, Zhu & Riffat, 2012, p. 141). China, along with other developing nations, contributed significantly to the Convention's structure, as demonstrated by clauses such as Article 3.1, which highlights the necessity for nations to safeguard the climate system in accordance with their capacities and obligations, with developed countries leading the efforts (UN, 1992).

In 1992, China ratified the UNFCCC, completing the signature process in 1994 (Qi, Zhao & Stern 2020, 80). China had a relatively quiet role during the discussions and the ratification process, despite having little experience and expertise in this field. In terms of foreign policy, its main objective was to break out from diplomatic isolation in the wake of the Tiananmen Square crisis. According to Shambaugh (2000, p. 29), China made this engagement as part of a larger initiative to present a more responsible and cooperative image abroad in an effort to lessen the consequences of its isolation and strengthen ties with Western nations. China's early climate change response was cooperative, involving talks and ratifying the UNFCCC, aiming to contribute positively to the international community while ensuring growth without external interference (Conrad, 2012, p. 441).

Six years later, China ratified the Kyoto Protocol under the UNFCCC, completing its ratification in August 2002, with the agreement officially coming into effect on February 16, 2005 (Qi, Zhao & Stern 2020, p. 80). The Kyoto Protocol of 1997 set emission limits for Annex 1 countries and transitioning nations to reduce emissions by 5.2% below 1990 levels between 2008-2012, excluding developing countries from legally mandated goals (Zhang, 2013). The agreement,

which included emissions trading and the Clean Development Mechanism,[7] sparked tensions between emerging economies like China and India and developed economies like the European Union and the United States, primarily because the rapid rise in emissions from emerging economies counterbalanced the reductions achieved by developed nations (Zhang, 2016).

As a result, China sought to reduce emissions without endangering its economic growth by avoiding the costs of external mitigation (Conrad, 2012, p. 441). China's skepticism, lack of trust in funding and technology transfer methods, as well as regulatory structure hindered its ability to balance climate agreements' economic effects. The formation of the G77/China bloc during COPs demonstrates its hard stance on differentiated responsibilities between developed and developing countries, opposing legally binding duties and voluntary emissions restrictions on climate change (Tseng, 2015, p. 21).

China's role in international climate negotiations has evolved due to domestic and global changes. Despite participating in climate discussions and implementing mitigation measures, China has shown a discrepancy between its domestic activities and major international advances (Zhang, 2013, p. 6). The responses to China's environmental policy from other countries and international organizations have been divided. Some applaud China's participation in global environmental forums and accords such as the UNFCCC, while others criticize the alleged discrepancy between China's stated policies and real actions. Critics like Stensdal (2012) also point out that after facing international criticism, new leaders Hu Jintao and Wen Jiabao had to address environmental problems and resource scarcity while balancing economic growth. As climate change became a domestic concern, the Climate Change Advocacy Coalition emerged within policy discussions beginning in the early 2000s.

2.3 China's Leadership in Clean Energy and the Paris Agreement in the 2000s

In this final segment, we will look at China's changing climate diplomacy from the early 2000s to the present. As a result of international criticism, China's policies changed significantly, even though initially climate change was considered a scientific issue rather than an urgent one. China showed its commitment to combining climate action with economic growth by developing

[7] Clean Development Mechanism (CDM) is a framework under the Kyoto Protocol that enables industrialized countries to invest in greenhouse gas reduction projects in developing countries as a means of achieving their own emission reduction targets.

the Five-Year Plans[8] and incorporating the term 'sustainable development'[9] in official policy documents.

China ratified the Kyoto Protocol framework in 2002, a four-year process compared to the UNFCCC, due to extensive discussions with other countries (Tseng, 2015, p. 21). In line with the Kyoto Protocol, China has implemented the Clean Development Mechanism and established an oversight board to monitor its use in response to climate change (Chmutina, 2010, p. 3). China and other developing countries rejected voluntary pledges during COP-4 and suggested changes to consumption and production patterns, subsequently discussing rules for CDM projects after COP-5. As a result, the Marrakech Accord of 2001[10] recognized Certified Emissions Reductions (CERs) to aid developing countries in achieving Kyoto Protocol commitments, and China's UN-sponsored mitigation initiatives heavily utilize the CDM framework for sustainable development. China hosts the most CDM projects globally, with 2,023 out of 4,869 worldwide, focusing on renewable energy, greenhouse gas elimination, fuel replacement, and waste heat recovery (Chmutina, Zhu & Riffat, 2022, p. 142).

The State Planning and Development Commission (SPDC)[11] replaced the China Meteorological Administration (CMA)[12] as the National Coordination Committee on Climate Change, shifting China's perspective from a scientific issue to a developmental one. Stensdal (2012) adds that in 2003, the Chinese government presented the concept of a 'scientific outlook on development', which emphasizes the application of scientific knowledge and expertise to guide China's future development. The government also started to recognize the negative effects economic development had on the environment, such as smoke and dust pollution from industry. Chinese researchers began looking at the serious effects of climate change in 2005 since it had become a security issue (Stensdal, 2014, 6).

[8] China's Five-Year Plans serve as strategic frameworks that guide national priorities and policies for sustainable growth and development over a five-year period.
[9] A sustainable development approach strives to achieve economic growth, environmental protection, and social equity without jeopardizing the ability of future generations to meet their own needs.
[10] The Marrakech Accord of 2001 established key mechanisms for implementing the Kyoto Protocol, including the Clean Development Mechanism (CDM), Joint Implementation (JI), and emission trading.
[11] State Planning and Development Commission (SPDC) is an agency of the Chinese government responsible for planning and overseeing economic development projects, resource allocations, and policy implementation.
[12] China Meteorological Administration (CMA) is responsible for providing weather forecasts, climate monitoring, and meteorological services in the country.

The introduction of large-scale renewable energy projects in the middle of the 2000s was one of the most important turning points in China's path to becoming a global leader in clean energy. The Chinese government passed the Renewable Energy Law in 2005 to boost the growth of wind, hydro, and solar energy, aiming to reduce greenhouse gas emissions, reduce environmental contamination, and increase local renewable energy availability. According to Dent (2014), China's move toward renewable energy is also driven by the country's desire to maintain energy security because its own fossil fuel supplies are running out quickly as a result of the country's rapid rise in energy consumption. In agreement, Yang and Cui (2012) note that China is a significant importer of coal, oil, and liquefied natural gas. Both sources agree that renewable energy, being locally sourced, presents a sustainable solution to the risks of relying on imported energy. To counteract the 5% yearly growth in energy intensity observed between 2002 and 2005, the Chinese government also set a target to reduce energy intensity by 20% by 2010. The 11th Five-Year Plan, presented in 2006, aimed to reduce energy use by implementing energy-saving measures to counter the 5% annual increase in energy intensity between 2002 and 2005 (Stensdal, 2014, p. 7).

China has maintained its position in international climate change negotiations despite air and water pollution and missed targets, attributed to its government's competing goals of maintaining social stability, promoting prosperity, protecting the environment, and promoting economic growth simultaneously (Chmutina, 2010, p. 4). China became the world's top emitter of greenhouse gasses in 2007 when the Intergovernmental Panel on Climate Change (IPCC)[13] released its fourth assessment report. China also maintained remarkable rates of economic growth in the face of the global financial crisis that lasted from 2007 to 2009, which in turn led to a rise in greenhouse gas emissions. Beijing is now more focused on tackling environmental deterioration and the effects of climate change (Stensdal, 2014, p. 7).

In 2007, Chinese non-governmental organizations (NGOs) established the China Climate Action Network, while international environmental non-governmental organizations (ENGOs) like Greenpeace and the Climate Group established offices in China. A case in point of a cooperative endeavor involving several agents within advocacy coalitions is the Global Environment Institute's Identifying Opportunities and Key Stakeholders to Mitigate the Energy

[13] Intergovernmental Panel on Climate Change (IPCC) is an international organization that assesses and synthesizes scientific research concerning climate change.

and Environment Crisis in Southern China. In order to improve energy efficiency and promote the use of renewable energy sources in Guangdong province, this project brought together research institutes, independent businesses, governmental organizations, finance entities, and ENGOs (Stensdal, 2014, p. 7).

In his 2021 article, Lai outlined China's voluntary efforts to reduce its carbon emissions in 2009, aiming to achieve a 40 to 45 percent reduction in carbon intensity from 2005 levels by 2020 (Lai, 2021, p. 85). In contrast, Guilhot (2006) suggests that the Chinese economy began its low-carbon energy transition starting in 2011, aligning with the implementation of the 12th and 13th Five-Year Plans. Premier Wen declared in 2009 that China would integrate climate change initiatives into its agenda for social and economic growth. The term 'low-carbon' started to appear more frequently in reports, policy documents, and official declarations.

China's climate change policies have evolved, prioritizing long-term studies and energy-saving initiatives (Stensdal, 2014, p. 8). China became the world's greatest carbon dioxide emitter by the time of the UNFCCC's 15th Conference of the Parties (COP 15) in Copenhagen, raising expectations for the country's climate-related obligations. Yet, China has been portrayed as a hindrance to the negotiation process, due to its emphasis on national interests and the voluntary nature of Nationally Appropriate Mitigation Actions. The Chinese delegation emphasized that domestically launched activities without international support will not be examined under measurability, reporting, and verification (MRV) principles, aiming to maintain distinction in climate obligations between Annex I countries and those that are not (Horvli, 2020, p. 22).

The 2009 Copenhagen Agreement,[14] a political consensus among key emitters and negotiation groups, blurred the lines between developed and developing countries, resulting in a legally enforceable global agreement (Zhang, 2016, p. 3). China affirmed its right to pursue economic development with other developing economies like Brazil, South Africa, and India. However, the world community criticized China for failing to negotiate a binding global climate change deal at the Copenhagen meeting. According to Zhang (2010), French President Nicolas Sarkozy openly criticized China for obstructing progress in climate negotiations, while Secretary Ed Miliband, in an article for The Guardian, accused China of leading a coalition that undermined the talks, often creating a misleading impression to the public. Leaders of affluent nations blamed

[14] The Copenhagen Agreement was a key outcome of the 2009 climate conference aimed at limiting global temperature rise and setting international goals for climate action.

China, citing its rejection of a legally binding commitment to cut carbon emissions as a blow to the climate meeting in Copenhagen (Lai, 2021, p. 86).

In 2011, China set three energy and carbon emission targets in its 12th Five-Year Plan, following the Copenhagen summit's conclusions. The targets included a 17% decrease in carbon intensity per GDP, a 16% drop in energy intensity, and an 11.6% increase in non-fossil fuel energy (Lai, 2021, p. 86). The updated strategy upheld earlier energy-saving measures, like adding the Top 1,000 to the Top 10,000 Energy Consuming Businesses Program. Additionally, trial carbon markets were introduced, resource taxation policies were enhanced, and energy conservation standards were established. The first steps toward climate change legislation were taken in 2011, and seven designated emission trading scheme (ETS) pilot projects were launched in 2012. In June 2013, Shenzhen City was the first to implement the pilot program (Stensdal, 2014, p. 8).

China took on a more constructive role at the Durban Conference in 2011,[15] helping to kickstart the creation of a legally binding climate framework that was scheduled to be completed by 2015. Dröge (2012) points out that Beijing emphasized five main requirements as prerequisites for any agreement during the Durban Conference: extending the Kyoto Protocol until 2020, evaluating its effects, creating a Green Climate Fund, boosting technology transfer from developed nations, and outlining shared but distinct responsibilities. Furthermore, two major turning points in the history of global climate politics were reached during the 2014 UN climate conference in Lima (Horvli, 2020, p. 23). A voluntary and comprehensive contribution was substituted for binding commitments similar to those of the Kyoto Protocol in the Lima Call for Climate Action,[16] and the submission of voluntary Intended Nationally Determined Contributions (INDCs) marked a move away from the leadership of developed countries towards a global process that is fully inclusive. This position more closely matched the soft global governance model supported by the US and China, in contrast to the EU's drive for a legally enforceable treaty (Zhang, 2016, p. 3). The United States and China revealed their respective climate reduction targets in November 2014, which helped pave the way for a successful climate agreement in 2015 (Horvli, 2020, p. 24).

[15] The Durban Conference of 2011 was a pivotal UNFCCC meeting that developed the Durban Platform for Enhanced Action, aiming to establish a new global climate agreement by 2015 and extend the Kyoto Protocol's commitment period.

[16] The Lima Call for Action, adopted at the 2014 UNFCCC Conference, set the framework for countries to submit their climate action plans.

Over the past 25 years, China has experienced significant changes in its economic structure, emissions of greenhouse gasses, and strategies for mitigating climate change (Stensdal, 2014, p. 9). China has shown a discrepancy between its initiatives on the domestic front and its reluctance to take significant action globally, despite maintaining strong economic development and changing its stance in international climate discussions (Zhang, 2016, p. 4). Scholars have presented different perspectives of China's climate diplomacy, emphasizing obstacles and changes in its strategy throughout the decades. Though opinions vary, there is a general consensus that China's involvement in climate change changed dramatically, becoming more proactive from the 2000s and demonstrating a rising commitment to global climate initiatives.

China is pushing forward with its climate action initiatives in 2024, with a particular emphasis on cutting carbon emissions and increasing renewable energy. The nation is still actively involved in international climate agreements, including the Paris Agreement, and it recently attended the COP26 and COP27. In order to assist the global climate targets, China is also making significant investments in green technologies and encouraging technology transfer, which demonstrates its commitment to balancing environmental sustainability with economic growth.

Chapter 3

China's Ambitions for a Low Carbon Economy

3.1 Introduction

This chapter explores China's recent initiatives, combining numerous government agencies and extensive regulatory frameworks, to prioritize environmental protection, climate change mitigation, and sustainable growth since 2015. In response to international pressure, China has set aggressive domestic emission reduction goals in an effort to persuade Western countries to make greater commitments. Significant achievements include reducing carbon intensity, promoting green growth, and integrating environmental preservation into economic strategies across successive Five-Year Plans, all while maintaining the coal industry. Even with these developments, diversifying energy sources and overcoming post-COVID-19 economic changes remain challenging. China's renewable energy regulations, which are centered on the Renewable Energy Law of 2005, are also covered in this chapter. Despite China's abundant renewable energy resources--such as solar power--which differ by region, the country still faces a number of difficulties at the local, national, and individual levels.

Finally, we briefly address China's role in spearheading international efforts to reduce greenhouse gas emissions and the use of fossil fuels in the BRICS countries through the use of renewable energy. Notwithstanding advancements in decreasing coal usage and augmenting non-fossil energy resources, obstacles continue to arise in broadening China's energy mix and progressing towards reduced-carbon substitutes. These include financial limitations and impediments to the establishment of a competitive indigenous renewable technology sector.

Since 2015, China has shifted its stance on environmental issues, prioritizing sustainable growth and putting greater emphasis on combating climate change and environmental degradation. The engagement of multiple government agencies and the amount of policy documents are clear indicators of this transformation (Berkelaar, 2018, p. 29). China's growing concern over greenhouse gas emissions worldwide has led to increased pressure from industrialized countries to reduce emissions. China has responded by establishing its own domestic reduction targets in an

effort to get Western nations to make larger commitments. While the US focuses on long term goals that extend to 2050, Conrad, in his 2012 article, points out that China prioritized mid-term emission reduction targets by 2020, aiming for a 40% reduction below 1990 levels. This emphasizes how vulnerable China is becoming to the effects of greenhouse gas emissions throughout the world (Conrad, 2012, p. 445).

President Xi Jinping and other Chinese officials have affirmed China's leadership in global cooperation initiatives in response to climate change. The importance that Chinese authorities attach to climate change has, however, recently decreased. Notable individuals frequently support the country's coal resources without bringing up low-carbon development or climate change. This shift has been attributed to a number of factors, including the COVID-19 epidemic, slower economic development, and increased worries about energy security in the context of the trade disputes between the United States and China. Despite this change, the Chinese government continues to prioritize low-carbon technology such as electric cars and renewable energy. The direction that policy talks go in the coming year will provide important clues about how much weight Chinese officials place on reducing carbon emissions and mitigating climate change (Sandalow, 2020).

3.2 China's Current Climate Goals

This section discusses China's current policy measures and climatic goals for ecological modernization and civilization, including increasing non-fossil fuel use, reducing emissions per GDP, peaking carbon emissions by 2030, and expanding forest stock. In addition, this section emphasizes China's achievements in integrating environmental protection and economic growth, with a special emphasis on pollution control, energy efficiency, and the switch to renewable energy sources.

China has included the concepts of ecological modernization and ecological civilization into policy discussions from the early 2000s. Four major goals have been set forth by the Chinese government in response to climate change: peaking carbon dioxide emissions by 2030, cutting emissions per GDP point by 60–65% from 2005 levels, increasing the proportion of non-fossil fuels in primary energy to 20% by 2030, and increasing the volume of forest stock by 4.5 billion cubic meters by 2030. These goals are included in China's 2015 Nationally Determined Contribution to the United Nations Framework Convention on Climate Change. Many observers

believe China will peak its CO_2 emissions far before 2030, which is the first goal. The third and fourth goals are equally attainable, and the fourth goal was accomplished in 2019, eleven years ahead of schedule (Sandalow, 2020, p. 4).

The 11th Five-Year Plan (2006-2010) in China emphasized the link between environmental preservation and economic growth, reassessing economic development and emphasizing green economy development and job creation. The plan aimed to create a just, peaceful society and economic environment (Horvli, 2020, p. 27). As part of its comprehensive energy conservation policy, China emphasizes the assessment and accountability of target responsibility for energy conservation. A statistical monitoring system has been established in order to assess the extent to which all 31 provincial governments and 1,000 significant firms have implemented energy-saving measures. Expert oversight began in 2010 for initiatives in 18 regions to reduce emissions and save energy. Since then, the government has actively promoted low-carbon transportation and energy conservation across various industries by undertaking ten targeted projects. Remarkably, 98.5% of new buildings' required energy conservation criteria were implemented during the design phase, and 94.4% were implemented throughout the construction phase (Xinhua, 2011).

Over the course of the 11th Five-Year Plan, China achieved its energy conservation goals, recording a significant 19.1% decline in energy consumption per unit of GDP, which resulted in a reduction of 1.46 billion tons of carbon dioxide emissions. Despite the national economy experiencing an average annual growth rate of 11.2%, the rise in energy consumption remained relatively modest at 6.6% annually. This led to a reduction in the energy consumption elasticity coefficient from 1.04 to 0.59 compared to the 10th Five-Year Plan (2001-2005), thereby alleviating the tension between energy supply and demand (Xinhua, 2011, p. 5).

In November 2009, China set a goal to decrease its carbon intensity by 40-45% by 2020, which was incorporated into its 12th Five-Year Plan for 2011-2015 (Horvli, 2020, p. 27). In order to create development strategies and research local low-carbon development models, China planned to launch low-carbon pilot projects across its provinces, autonomous regions, and municipalities to develop development strategies and research local low-carbon models. These projects aimed at enhancing industrial system transformation and consumer habits, targeting residential neighborhoods, commercial sectors, and industrial zones. In an effort to reduce greenhouse gas emissions at the lowest possible cost and enhance resource allocation efficiency, China also planned to establish a carbon emissions trading market (Xinhua, 2011, p. 22).

Furthermore, China has announced several mitigation measures, including reducing carbon dioxide emissions per GDP unit by 40% to 45%, increasing non-fossil energy in primary energy consumption to 15%, increasing forest coverage by 40 million hectares, and increasing forest stock volume by 1.3 billion cubic meters (UNFCCC, 2023).

China aimed to generate electricity from non-fossil sources by 2015, with 40 GW of nuclear power, 70 GW of wind power, 5 GW of solar power, and 120 GW of hydropower. This represented a significant increase compared to the then-current capacity of 10 GW. Despite this push towards renewable energy, it was anticipated that fossil fuels, especially coal, would continue to be the primary source of electricity generation (Paltsev et al., 2012, p. 7). By 2020, the 12th Five-Year Plan expected 10% of the energy mix to come from natural gas, or 10–13 trillion cubic feet of gas consumed (see Table 2). The government implemented a number of measures to achieve these goals, such as pilot programs for emissions trading, energy and coal consumption caps, carbon capture and storage projects, renewable energy development initiatives, residential energy usage limits, and support for the rollout of smart grids and electric vehicles (Williams, 2014, p. 4).

Table 2. *China's major energy and emissions goals for 2015 and 2020.*

	12th Five-year plan goals for 2015	Copenhagen targets for 2020
Energy intensity	18% reduction relative to 2010	
Carbon intensity	18% reduction relative to 2010	40-45% reduction relative to 2005
Non-fossil fuels in total energy	11.4%	15%
Nuclear power capacity	40 GW	
Wind power capacity	additional 70 GW	
Solar power capacity	additional 5 GW	
Hydro power capacity	additional 120 GW	

Source: Table 1 in S. Paltsev et al., "The Role of China in Mitigating Climate Change" (2012).

Ultimately, the Chinese Communist Party (CCP) declared a war on pollution in 2014, highlighting the importance of combating climate change as well. On this matter, President Xi Jinping has taken a leading position, promising to bring back China's blue skies on a number of significant occasions (Horvli, 2020, p. 27).

China's 13th Five-Year Plan (2016-2020) prioritized climate change measures and sustainable practices, despite increasing environmental concerns (Horvli, 2020, p. 28). China's economic growth was mostly driven by coal, on which it depended significantly. In response to this dependence, the 13th Five-Year Plan prioritized environmentally sustainable measures while securing the continued use of coal through 22 adjustments (Joergensen, 2019). China aimed to meet international climate commitments by reducing pollution, improving energy efficiency, and promoting green growth, while still maintaining the coal sector and transitioning away from harmful energy sources. Although the US government has supported 'clean coal' as a way to increase China's energy independence, this strategy has failed because of a lack of proof and expensive costs (Joergensen, 2019, p. 22). By 2020, the plan aimed to cut carbon dioxide emissions per unit of GDP by 18%, cap energy consumption at 5.0 billion tons of standard coal equivalent, and reduce energy consumption per unit of GDP by 15% from 2015 levels (UNFCCC, 2023, p. 91). Moreover, China's energy supply composition has improved, with non-fossil energy accounting for 15.9% of total consumption in 2020, surpassing 2009 and 13th Five-Year Plan goals. The forest carbon sink has expanded significantly, with the total amount of forest stock now exceeding 17.5 billion cubic meters—beyond China's aims as well as growth estimates from 2009 (UNFCCC, 2023, p. 87).

In order to transition to a low-carbon economy, China aimed at prioritizing energy efficiency, reducing pollutants and greenhouse gas emissions, and encouraging clean energy deployment, with a goal of reducing energy consumption to 5 billion tons by 2020. Achieving this target means reducing the amount of coal used, reducing the amount of coal used in contaminated areas, boosting flagship projects, reducing energy consumption and carbon emissions in vital industries and cities, and expanding the use of renewable energy sources. Furthermore, cooperation between adjacent areas such as the Yangtze River Delta, the Pearl River Delta, and Beijing-Tianjin-Hebei is tackling transboundary environmental problems more and more, which improves the effectiveness of pollution control strategies (Zhang, 2016, p. 11).

In China's 14th Five-Year Plan (2021-2025), the primary goal is to rejuvenate its modern socialist society by revitalizing the economy, ensuring livelihoods, and addressing weaknesses in the industrial chain. The country is implementing a clean, low-carbon, safe, and efficient energy system and a green, low-carbon, circular, and sustainable economic system, despite potential slowdown in energy consumption growth in heavy and chemical industries. China plans to adopt new development ideologies, step up economic reform, and focus on high-quality development, all of which will expedite carbon reduction and energy conservation (Jiankun, Zheng & Xiliang, 2022).

The Chinese government also expects that the cost of power generated by wind and solar energy will approach the cost of coal throughout the 14th Five-Year Plan. By 2025, non-fossil fuels are predicted to make up 20% of primary energy consumption, with coal's share expected to decrease from 56.8% in 2020 to 51%, a 7% annual average growth. A cap of fewer than 55 tons of standard coal equivalent (tce) and a CO_2 emission limit of less than 10.5 billion tons per year by 2025 are projected to result in a 19% reduction in CO_2 emissions per GDP unit (He et al., 2022, p. 28). However, China's economic progress and recovery have been hampered by the global COVID-19 pandemic's effects on global supply and demand, industrial chains, and the world economy. In order to mitigate these impacts, policies that support infrastructure development, invest in urbanization, promote the growth of the digital economy, modernize outdated industries' technology, and improve integrated urban infrastructure will help to lower energy intensity (He et al., 2022, p. 27).

3.3 China's Progress Towards Renewable Energy

China's journey towards renewable energy is discussed in this section, with emphasis on significant policies and accomplishments made possible by the Renewable Energy Law of 2005, which provides tax exemptions, subsidies, and tariffs to encourage renewable energy installations. While hydropower remains crucial, we also discuss major investments that have been made in wind and solar power, along with initiatives promoting renewable electricity purchases and photovoltaic innovations.

China's Renewable Energy Law, passed in 2005, serves as the foundation for its commitment to renewable energy, offering incentives such as feed-in tariffs, subsidies, and tax breaks. Since 2005, China has enacted a number of laws pertaining to renewable energy, such as

the Renewable Energy Law, the Medium to Long Term Plan for Science and Technology, and the 11th Five-Year Plan for National Economic and Social Development (Zhang et al., 2013, p. 349). With a focus on non-fossil fuel sources, China's transition to a more varied energy portfolio was accelerated by the 2006 enactment of the Renewable Energy Law. In 2007, the National Development and Reform Commission announced the Medium and Long-term Development Plan for Renewable Energy, aiming to increase non-fossil fuels' percentage in primary energy consumption from 7.5% to 15% by 2020. China also launched the Medium and Long-Term Plan for Nuclear Power Development which aimed at constructing over 40 nuclear power plants and increased existing nuclear capacity to 40 gigawatt-electric by 2020 (Kyriakopoulou, Xia & Xie, 2022).

China receives a lot of solar energy each year, yet the amount that is available varies depending on the area. The eastern portion of the nation receives 3300–8400 megajoules of solar energy per square meter on average per year. The potential for solar energy harvesting and usage is almost infinite, provided that technology is feasible and costs are reasonable. The China Meteorological Research Institute estimates that wind power reserves above 10 meters above sea level are about 3226 GW, of which roughly 1000 GW are thought to be exploitable. According to China's hydropower resource survey, the country has 6000 TWh of reserves, with an average exploitation rate of about 30%. Furthermore, there are around 93 EJ of geothermal resources, of which 1000 PJ are accessible for use (see Table 3; Liu et al., 2009).

Table 3. *China's prospective sources of renewable energy.*

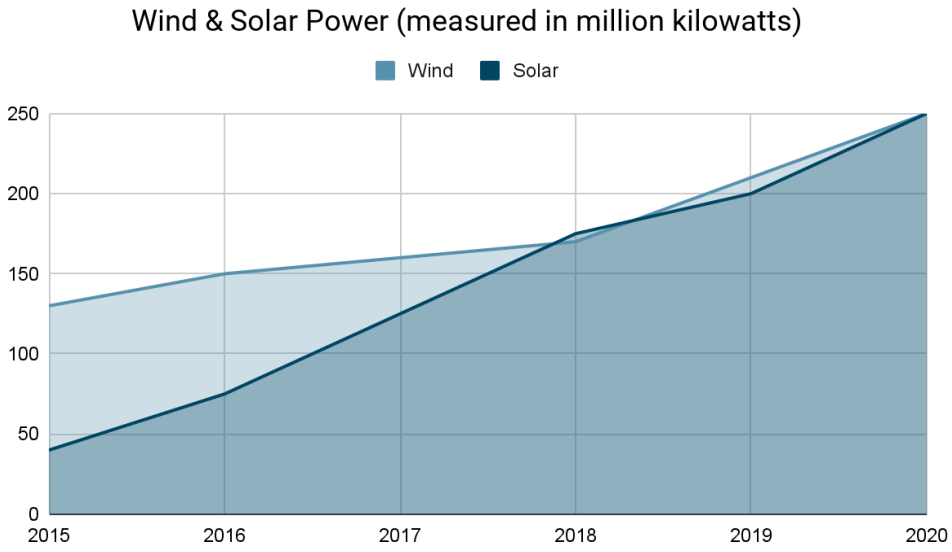
Renewable energy sources	Unit	Potential
Wind	TWh/yr	2500-8000
Photovoltaic	TWh/yr	1300-6500
Hydro power	TWh/yr	1760-3000
Solar thermal	PJ/yr	6000-30000
Geothermal	PJ/yr	>1000
Biogas	PJ/yr	1259-2488

Source: Table 1 in W. Liu et al., "The Potential of Renewable Energy Systems in China" (2009).

While wind and solar power have grown significantly, China's hydropower sector has contributed significantly to the nation's electrical supply for decades. China generated almost 25% of its electricity from renewable sources in 2019. Hydropower contributed 18%, wind power contributed 5.5%, and solar power contributed 3%. As of 2019, China possessed a hydroelectric capacity of 356 GW, more than three times that of any other country. A prime example of the Chinese government's long-standing dedication to increasing its hydroelectric capacity include the Three Gorges Dam, the largest hydropower project in the world, which reached full operational status in 2012 with a capacity of 22.5 GW (Sandalow, 2020, p. 6).

China has made significant progress in wind and solar energy development, as per its 13th Five-Year Plan, with significant progress in the production of wind and photovoltaic (PV) power and building extensive facilities and pilot programs for photo-thermal power production. China has established mechanisms for the comprehensive purchase of renewable electricity and has positioned itself as a leader in photovoltaic innovation. As part of its efforts to increase the use and exploitation of renewable energy, it has also implemented a targeted management system (UNFCCC, 2023, p. 90). China claimed to have 210 GW of wind power capacity at the end of 2019, surpassing all other countries. Over the year, it increased its wind generating capacity by 28%. However, limitation is a problem for the wind power industry in China, as shown by the 4% national limitation rate in 2019.

Furthermore, by the end of 2019, China had more solar power capacity than any other country—more than three times as much—with 205 GW. In 2019, the limitation of solar power stood at about 2% countrywide. The solar generation in China increased by 12% in the first quarter of 2020. This increase was ascribed to the installation of 30 GW of new solar capacity in 2019 as well as the introduction of power quotas for renewable energy (Sandalow, 2020, p. 8). China aimed to have 250 million kW of PV electricity and 280 million kW of wind power installed by the end of 2020 (see Figure 3).



Source: Figure 4.4/5 in UNFCCC.,"The People's Republic of China Fourth National Communication on Climate Change" (2023).

Figure 3. Trends in China's Installed Solar and Wind Power Capacity (2015-2020).

Renewable energy development faces challenges such as unclear mandatory consumption procedures, insufficient resource availability, outdated energy system planning, and rising soft costs at national, regional, and individual levels. Projects involving renewable energy are also susceptible to risks including market trading interventions, delayed repayment of subsidies, and rising soft costs. In order to guarantee the industry's continuous expansion and proficiently tackle these obstacles, it is crucial to execute enduring goals and tactics (CIFF, 2021). Moreover, the integration of renewable energy sources into the global power grid presents stability concerns that require flexibility in order to manage fluctuations between the supply and demand of electricity in real time. As the share of non-fossil fuel energy generation rises above 80%, there is a lack of knowledge regarding the consistent upkeep of power system stability. Increasing energy storage capacities, such as those for hydrogen, is one option to take into account. China wants to increase the amount of hydrogen it uses annually from 25 million tons in 2019 to over 81 million tons by 2050. A significant amount of flexible storage capacity may be provided by increasing China's fleet of New Energy Vehicles (NEVs) (Kyriakopoulou, Xia & Xie, 2022, p. 7).

3.3.1 China and the BRICS Nations

In this context, we talk about the cooperation and strategic plans of the BRICS countries, which together have enormous global reach and power. Even though each country has its own distinct interests, we discuss how the BRICS countries are committed to enhancing their energy utilization and developing their economies in order to sustain growth and increase their worldwide impact.

Together, the BRICS countries—Brazil, Russia, India, China, and South Africa—occupy 30% of the planet's land area, are home to 40% of its population, and generate more than 50% of the world's gross domestic product. As the usage of fossil fuels and greenhouse gas emissions increase, there has been a trend towards renewable energy resources due to their unique economic, political, and social attributes. For example, China has abundant wind resources in Inner Mongolia and potential for biomass energy in rural areas. India obtains an incredible 5000 trillion kWH equivalent of solar energy thanks to its tropical climate. Russia, which has the greatest land area in the world, comes in third place for both production and consumption of energy, making up 10% of worldwide production and 5% of global consumption. Brazil possesses rich agricultural resources, mineral deposits, and clean energy from hydroelectric sources, making it the sixth-largest global holder of green energy reserves. South Africa is ideally situated to take use of solar energy because of its comparatively smaller population and economy. By 2030, the country wants to obtain half of its electricity from renewable sources (Abba, 2022).

BRICS countries, except Russia, have historically supported the G77+China[17] group to address developing countries' climate change concerns in UNFCCC discussions. The coalition, consisting of diverse members, shares four main points of agreement: commitment to common but differentiated responsibility, prioritizing national economic development, opposing mandatory emission reduction targets, and supporting climate finance distribution. These countries are united in their quest of equitable distribution of climate finance and sustainable economic development (Downie & Williams, 2018, p. 399). In November 2009, BRICS nations discussed emissions reduction and financial obligations within Kyoto Protocol and UNFCCC frameworks, emphasizing sustainable development for developing countries and urging wealthy nations to lead global climate governance. BRICS countries formed an alliance in global climate policy despite a

[17] The G77 is a coalition of 134 developing countries at the United Nations, advocating for collective interests in global economic development, climate change, trade, and governance.

lack of legal treaties. They must become experts in renewable energy technologies and collaborate on climate-related issues to stay competitive in the global arena (Xinzhu, 2021, p. 262).

The BRICS countries are focusing their efforts on energy portfolio optimization and economic development transformation to maintain rapid growth and increase their national power (Xinzhu, 2021, p. 260). Despite having different interests, BRICS have established structures for fostering collaboration and formalizing their connection. Since 2009, BRICS has held nine high-level summit meetings, involving ministers from various sectors, including foreign affairs, finance, agriculture, trade, energy, and environmental. 2014's sixth BRICS summit saw the creation of the New Development Bank Agreement. In addition, the BRICS have started further diplomatic initiatives, such as gathering comparative data on statistics and creating conferences for corporate executives (Downie & Williams, 2018, p. 399).

The international order is seen by China's leadership as consisting of one superpower, many great powers, a perspective that is consistent with its foreign policy goals (Gundumella, 2018). China's global prominence in the BRICS framework is due to its nuclear weapons, second-largest economy, and permanent U.N. Security Council membership. Although China's involvement has improved the standing and prominence of the other three BRICS countries, China may not feel as strongly that it needs to stay in the BRICS group (Glosny, 2010, p. 109). China's growing global influence, particularly since 2008, is evident in its participation in the BRICS, viewing it as a means for promoting friendly bilateral discussions during annual summits in Xiamen. The Chinese government has a strong history of collaborating with developing nations, including BRICS framework partnerships and South-South dialogues on global governance issues. Chinese presidents emphasize justice and coordination during financial crises, demonstrating their commitment to strengthening cooperation with other developing countries (Raman, 2018, p. 11).

Furthermore, China sees BRICS as a forum to discuss problems affecting other poor countries, such as Western protectionism, unfair trade practices, and climate change. By working in a group setting, China believes it will be able to better pursue its objectives on the international stage and deflect criticism (Raman, 2018, p. 10). According to Glosny (2010), China can protect itself from US interests and lessen perceptions that it poses a threat thanks to its membership in BRICS. China's approach to the financial crisis is less combative than other BRICS members, leveraging complaints from Brazil and Russia, who have adopted a more combative stance, blaming the US for the crisis. During WTO negotiations, Brazil and India have aggressively

challenged Western countries on issues related to free trade. Chinese specialists are optimistic that they can lessen the hostile dynamics among fellow BRICS countries by engagement and collaboration, even as other BRICS members act as a buffer for China by freely expressing their criticisms (Glosny, 2010, p. 114).

China has a great deal of influence inside the BRICS due to its strong economy, nuclear arsenal, and membership in the UN Security Council, all of which have improved the group's reputation internationally.

3.3.2 Impact of BRICS Climate Change Cooperation

This section examines the BRICS collaboration on climate change, focusing on how these countries use green development to spur economic growth. By aligning climate policies with economic goals and enhancing global influence through information exchange and technology transfer, BRICS has notably shaped China's economic strategies, emphasizing energy security, environmental preservation, renewable energy, and CO_2 reduction.

The major greenhouse gas emissions of the BRICS countries are a result of their reliance on fossil fuels and their compliance with the Nationally Determined Contributions. These nations were responsible for 45.9% of the world's emissions as of 2021. Emissions have been rising steadily in both China and India; China has set a target to become carbon neutral by 2030, while India has suggested aiming for net-zero emissions by 2070. South Africa's emissions have decreased in line with its NDCs, but the country still depends mostly on fossil fuels. By 2025, South Africa wants to reach its carbon peak, with emissions expected to reach 398–510 Mt CO_2. In contrast, Brazil and Russia are in a good position to achieve their respective goals of cutting emissions by 50% and 70% by 2030 because they have already passed their peak emission stages and have maintained relatively consistent emission levels (Shen & Zou, 2024, p. 74).

Beyond environmental issues, the synergy of BRICS cooperation supports economic growth and promotes green growth (Rinaldi & Martuscelli, 2016). BRICS countries prioritize economic growth in their climate change policies, focusing on selective emission reduction to advance their financial interests and avoid disrupting their trajectory, indicating moderate commitments. Investing in green technology and renewable energy infrastructure opens up new avenues for innovation, job development, and sustainable economic growth for member states. In addition to promoting domestic growth, shared investments in clean energy and green sectors also

promote trade and regional integration. As a result, corporate commitments usually center on areas where reducing emissions may be done without endangering their ability to grow economically (Rinaldi & Martuscelli, 2016, p. 7).

Renewable energy sources are crucial for reducing greenhouse gas emissions, slowing climate change, and protecting the environment. China leads in technology development in this area, while India, Brazil, Russia, and South Africa are growing steadily. The regional growth of renewable energy across China's 29 provinces was studied by Wang et al. (2020), who found notable differences in the rate of advancement between various regions. Western provinces lag behind while economically robust regions like Beijing, Shanghai, and Guangdong demonstrate significant development and persistent advantages. The report emphasizes how China's institutional policies and economic underpinnings have a significant impact on energy security, environmental preservation, the generation of renewable energy, and the decrease of CO_2 emissions (Abbas et al., 2022, 40).

BRICS countries are collaborating on climate change, enhancing renewable energy deployment, energy efficiency, and carbon emissions reduction through information sharing, technology transfer, and cooperative research, thereby promoting sustainable practices and environmental preservation. Collaborative efforts in solar and wind energy development utilize each member's unique skills, promoting a shift towards greener energy sources and reducing fossil fuel dependency. For instance, China is the world's largest investor in clean energy solutions and has significant technological know-how in fields including industrial automation, hydrogen generation, electric vehicles (EVs), battery storage, and solar panels. China has signed trade agreements with Russia to utilize Russia's hydroelectric and renewable energy resources along its eastern border, potentially enabling Chinese investments in Siberia's natural gas liquefaction projects. The goal of China and Russia's strengthening energy sector ties is to promote the two countries' political and economic interdependence (Losekann & Tavares, 2021).

Climate change cooperation between the BRICS economies also strengthens the collective voice of emerging economies in global climate governance forums. BRICS countries leverage bilateral and multilateral cooperation, building multilateral dialogue mechanisms in the Conference of the Parties (COP), to enhance their influence on international climate negotiations and agreements, aligning positions and advocating common interests (Xinzhu, 2021, p. 262). China and India are actively engaged in efforts to curb coal emissions, with China's 13th Five-Year

Plan intensifying these endeavors. India is making strides towards achieving its goal of raising the proportion of non-fossil fuel-based energy sources to 40% of its total installed electricity capacity by 2022, surpassing its target set for 2030 (Downie & Williams, 2018, p. 401). BRICS members promote equality, shared responsibilities, and climate justice through diplomatic engagement and strategic alliances, ensuring the global climate agenda considers poor nations' needs and objectives. Their coordinated efforts in raising funds for climate change adaptation and mitigation improve global climate action efficiency.

3.4 Challenges and Opportunities in Adopting Green Energy Technologies

Now we discuss the challenges and opportunities in adopting green energy technologies in China where despite efforts to reduce coal reliance, transitioning to renewables like solar and wind is difficult due to higher costs, lower efficiency, and irregularities. Financing obstacles also impede green energy innovation and project execution even more, especially for small and medium-sized enterprises.

China’s heavy reliance on coal for electricity generation has led to increased air pollution and carbon emissions. The industry’s vested interests and infrastructure make transitioning to cleaner energy difficult. Despite doubling its non-fossil energy share and decreasing coal consumption, China faces challenges in diversifying energy sources and accelerating low-carbon alternatives. China’s economic growth was expected to slow down after 2020, with a potential drop in coal reliance to less than 10% by 2050, necessitating the swift decommissioning of current coal-fired power facilities to ensure long-term economic growth and environmental sustainability (He, Li & Zhang, 2022, p. 31). Indeed, there was a slowdown, which was attributed to COVID-19-related disruptions and the challenges of transitioning from coal. These factors had an impact on both industrial performance and the overall economy. The country is now building or approving a large number of cleaner Integrated Gasification Combined Cycle (IGCC) plants. However, the complete cessation of coal use might lead to asset stranding, reduced operating capability, and employment losses. The government’s carbon neutral goal contradicts its uncertain coal development stance. A short-term solution could be to reduce coal-fired power facility hours, while addressing socio economic concerns for a smooth transition (Zeng et al., 2022, p. 1232).

Green energy technologies, like solar and wind power, may face challenges in emerging nations like China due to their higher costs and lower efficiency compared to conventional energy

sources. This could limit the business potential that these technologies have (Wang, Li & Liu, 2023). In 2011, China's wind energy industry exceeded 30 GW, leading to 40% of manufacturing capacity not being utilized, resulting in surplus capacity due to overproduction exceeding domestic needs. Chinese turbine producers faced a 27 GW overcapacity in 2012, which increased to 36.5 GW in 2013. With more than 300 cities attempting to develop solar photovoltaic (PV), China's industrial overcapacity problem is even more apparent. Over 2,000 businesses, half manufacturing solar products, meet global and Chinese demand, with production capacity exceeding double global demand and 20 times the Chinese national market (Zhang et al., 2013, p. 20). Furthermore, because renewable energy sources are intermittent, it can be difficult to guarantee a consistent supply of electricity. The lack of suitable energy storage technologies may limit the ability of renewable energy to completely replace conventional sources.

Despite China's rapid economic growth, it still lacks the necessary resources to fully comply with national and international environmental laws and policies, despite its annual GDP growth rate of around 10% over the past 20 years. Administrative inefficiencies and problems with horizontal administration, resulting from the division of environmental protection tasks across several agencies, impede the execution of environmental programs. The challenge of coordinating economic development initiatives between federal, provincial, and municipal governments makes vertical integration much more difficult to achieve (McBeath & Wang, 2008, p. 8). A lack of public knowledge and comprehension as well as concerns about the cost and dependability of these alternatives, especially in the event of extreme weather may prevent China from adopting green energy technology. Businesses and households may be reluctant to adopt renewable energy solutions as a result of these concerns (Wang, Li & Liu, 2023, p. 4).

China's geothermal, biomass, and wind sectors are still developing compared to Western counterparts, leading to a lack of expertise in installation and maintenance, which affects investors and market competition. Although domestic manufacturing of renewable technology has the potential to reduce costs, reliance on imported equipment limits the range of available transaction alternatives and reduces competitiveness (CSEP, 2000). Furthermore, the lack of funds for human salaries and operational expenses in green energy projects often leads underfunded managers to seek alternative revenue sources, particularly for small and medium-sized businesses, crucial players in green energy innovation (Wang, Li & Liu, 2023, p. 4). In areas like ecosystem management, habitat preservation, species protection, field monitoring, public environmental

education, and law enforcement, most nature reserves suffer from a shortage of specialized personnel. Employees involved in environmental conservation are frequently not given enough training (McBeath & Wang, 2008, p. 9).

China's increasing demand for green energy technologies is driven by environmental concerns, energy security, and economic development, prompting the launch of pilot programs in seven provinces and cities in 2011. The institutional framework for monitoring, accounting, reporting, verification, and data quality management was strengthened, and technological standards were raised. By the end of 2020, all pilot carbon markets had paid auctions, implemented quota allocation, held 38 paid auctions, and generated a total trading volume of 42,299 million tons. National authorities accelerated the creation of a national carbon emission rights trading market by releasing the Construction Plan, Measures for Management of Carbon Emission Rights Trading, and the List of Key Emission Units under National Quota Management of Carbon Emission Rights Trading (UNFCCC, 2023, p. 117). In addition to expanding the domestic market, exports and international collaboration are an important factor in supporting the growth and competitiveness of the industry.

China's energy policy leaders emphasize the importance of government involvement in the development of renewable energy sources, promoting knowledge sharing, technological transfer, and capacity building. Government finance methods are crucial in promoting solar PV and wind power industries, domestic markets, and global competitiveness for Chinese enterprises through the renewable energy program, which includes research and development funding. In order to fund research and development, the government imposed a 0.008 RMB per kW/h of electricity grid charge in 2006 and required China's electrical networks to acquire renewable energy. Additionally, the government provided subsidies for the construction of domestic renewable energy production. About $320 million USD was given to companies developing renewable energy projects between 2006 and 2008 (Boyd, 2012, p. 15).

The adoption of green energy technologies in China is hindered by administrative inefficiencies, coordination problems, and public skepticism regarding cost and reliability. China could therefore invest in local manufacturing to lessen its dependency on imports, improve public education about the advantages of renewable energy, streamline its administrative procedures, and increase funding for green projects in order to address these issues. Overall, it is important to emphasize China's aggressive attitude to ecological modernization and climate goals, even in the

face of major obstacles to the development of renewable energy, such as popular skepticism and bureaucratic inefficiencies. Furthermore, China's leadership in the BRICS improves efforts to manage the climate globally by pushing for stronger alliances and increased financial support for climate adaptation and mitigation.

Chapter 4

Implications of China's Climate Diplomacy

4.1 Introduction

The implications of China's climate diplomacy are examined in this last chapter, which focuses on the country's ambitious environmental goals, which include a major increase in renewable energy and forest cover by 2030. Fossil fuels are still widely used, with coal accounting for a large portion of the world's CO_2 emissions despite these efforts. This chapter discusses China's partnerships with the UN since 1971, highlighting the importance of climate diplomacy in boosting China's global influence and providing major finance for energy-efficient and renewable projects.

The western implications of China's climate diplomacy are also discussed in this chapter, particularly the role of the United States and the European Union. Tensions between the US's unwillingness to accept international targets and China's increasing emissions undermines global climate efforts and exacerbates catastrophic climate impacts. Meanwhile, when the US withdrew from the Paris Agreement in 2020, the EU and China established a close partnership in 2005, focusing on the development of the carbon market and sustainable urbanization. We will explore how partnerships, despite differing approaches and challenges in coordinating policies across diverse political landscapes, effectively advance global climate initiatives through bilateral and multilateral engagements.

China has set aggressive targets to reduce CO_2 emissions by over 65% per GDP unit, increase non-fossil fuel use in primary energy consumption by 25%, expand forest cover by 6 billion cubic meters, and increase solar and wind energy production to over 12 billion kilowatts by 2030. Since 2009, renewable energy investments have increased dramatically and now account for more than 59% of all energy investments. However, China's energy consumption remains heavily reliant on fossil fuels, accounting for 88% of total energy consumption in 2014 and 84.7% of primary energy consumption in 2019, despite efforts to reduce this dependency. In 2015, the country accounted for 52% of global CO_2 emissions, largely as a result of its usage of coal (Xu, Tang & Pittock, 2021). For China, it is more important to ensure the safety of its coal mining

operations, as well as a sustainable supply of coal so as not to disrupt the country's transportation sector and coal power generation (He, 2014). Additionally, the country's response to the COVID-19 pandemic encouraged investment in high-emission businesses. As such, in order to achieve its climate commitments, China has taken extreme steps to drastically reduce emissions (Xu, Tang & Pittock, 2021, p. 1).

China aims to reduce coal reliance by 40% to 50% by 2050, emphasizing the importance of diversifying energy sources and increasing efficiency for energy security. The country also aims to develop leadership in the production and export of energy technologies. Pollution has long been a major concern, and China must address it in its policies on climate change and environmental preservation. Recent occurrences such as acid rain, air pollution, heavy metal toxicity, and water contamination are linked to the overall environmental deterioration that has occurred during the previous thirty years of fast economic expansion. Climate security should be addressed through the energy-water-food-climate interconnection, with sustainable development strategies prioritizing policies and technologies to maximize resource use (He, 2014, p. 17). With China being the world's largest emitter of greenhouse gasses, its stance on climate change has significant implications for international efforts to mitigate its effects.

China's climate diplomacy has led to significant changes in its domestic policy framework, with a commitment to carbon neutrality by 2060 and peak emissions by 2030. Rapid growth in solar and wind power installations suggests renewable energy sources could eventually replace coal in China's energy mix in the future decades. The nation's energy planning body has set wind and solar PV generation capacity targets at 200-300 GW for wind and 100 GW for solar power by 2020, a significant increase from the eight years prior (Green & Stern, 2015). The Chinese government uses a variety of policy tools to promote the growth and application of renewable energy, such as guaranteed grid connection and full purchase, grid pricing based on classification, mandatory market share quotas, government concession programs, and financial support for renewable energy projects (Zhang et al., 2013, p. 8).

Moreover, China's climate diplomacy has necessitated structural changes in sectors, especially those reliant on fossil fuels, to transition to greener energy sources, despite challenges in areas associated with heavy industry and coal. China's coal consumption decreased by 3% in 2014 due to improved efficiency in coal-fired power plants, and by 2015, coal usage per unit of power had dropped by over 2%, indicating a potential annual reduction of more than 6% (Green

& Stern, 2015, p. 20). It is imperative that China diversify its energy sources, including non-coal sources, in order to foster energy security and explore new energy sources, gradually replacing coal to generate more electricity. However, other sources—like gas and hydroelectric power—may be more prominent but might play a more limited role in the far future (Green & Stern, 2015, p. 36) In addition to lessening China's environmental impact, these initiatives have accelerated the development of the green economy, promoting innovation and generating new job possibilities in the renewable energy sector.

China's climate diplomacy is crucial for its foreign policy objectives and international interactions. As a leader in climate action, China gains international collaboration and goodwill. Since the 1980s, China has increased its involvement in international politics, particularly in carbon cooperation. China's participation in the Paris Agreement is influenced by scientific advancements, political unanimity, improved governance, information sharing, public awareness, technological disparities, trade openness, and international reputation concerns. Through short-term carbon management programs, improving energy efficiency, and long-term measures to reduce greenhouse gas emissions by promoting the development of low-carbon technology, China demonstrates its commitment to international cooperation in combating climate change. Nevertheless, it is important to remember that China does not always benefit from international cooperation (Chmutina, Zhu & Riffat, 2012, p. 13; see Section 4.2).

China and the United Nations are key partners in the global fight against climate change. Since 1971, the UN Environment Programme has supported China's State Environmental Protection Administration (SEPA)[18] and environmental institutions. Collaboration involves raising public awareness, providing technical assistance, networking, and strengthening capacity through staff training and policy development. Significant financing for climate change activities is also provided to China; 17% of all funding from the Global Environment Facility (GEF)[19] goes to Chinese programs, with 70% of those funds going toward energy efficiency and renewable energy projects. Notably, China joined the US, France, and the European Union in making joint climate change declarations in 2015 (Chmutina, Zhu & Riffat, 2012, p. 14).

[18] China's State Environmental Protection Administration (SEPA) is the government organization in charge of protecting and regulating the environment.

[19] Global Environment Facility (GEF) is an international partnership established in 1991 that provides funding to address global environmental issues.

China is actively promoting climate collaborations in various multilateral forums, including BRICS Meetings, the Major Economies Forum on Energy and Climate, and the G20 Summit. The Presidency Statement on Climate Change was published during the G20 Sherpa Meeting,[20] forming the Climate Finance Study Group (CFSG) in conjunction with the Green Finance Study Group (GFSG), and delivering its ratification paper for the Paris Agreement to former UN Secretary-General Ban Ki-moon (Qi, Zhao & Stern, 2020, p. 99). China is implementing a new global governance model as part of the Belt and Road Initiative (BRI),[21] aiming to promote economic cooperation among Europe, Africa, and Asia. The BRI has significant climate implications, especially regarding coal-powered plants. The NDRC, Ministry of Environmental Protection, Ministry of Commerce, and Ministry of Foreign Affairs jointly produced the Guidance on Promoting Green Belt and Road in May 2017, with an emphasis on sustainable development (Sandalow, 2020, p. 12).

4.2 Western Policy Implications for China's Climate Diplomacy

We now examine how China's climate change policy is influenced by Western countries, including the United States and the European Union. The discussion emphasizes the conflicts that impede global climate initiatives, stemming from China's large emissions and the United States' unwillingness to accept strict carbon reductions. It also addresses the climate partnership between the EU and China, highlighting how it influences the development of technological cooperation and climate policy.

Western countries have long been leaders in climate action, promoting emission reductions, the use of renewable energy sources, and adaptation strategies through international agreements like the Paris Agreement. The principles of sustainable development, intergenerational equity, and environmental stewardship are reflected in these initiatives. Moreover, Western governments frequently include climate concerns into their trade, investment, and foreign aid plans in order to leverage financial incentives in support of global low-carbon growth.

The US and China's relationship over climate change remained tense during the 1990s and 2000s, mainly because China refused to abide by the Kyoto Protocol's emissions reduction

[20] The annual G20 Summit is preceded by a preparation meeting called the G20 Sherpa meeting, where representatives from G20 member countries, also known as Sherpas, debate and negotiate agendas and priorities.
[21] Belt and Road Initiative (BRI) is a global development strategy launched by China in 2013 to enhance economic cooperation and connectivity between Asia, Europe, and Africa.

obligations and the US refused to ratify the pact. Still, China launched programs aimed at energy efficiency and renewable energy during this time, while the US concentrated on becoming energy independent and reducing its dependence on coal (Belis et al., 2015, p. 205). China and the US began working on climate change in 2008 and 2009, as part of a strong bilateral relationship. Cooperation increased under Obama's presidency until 2011, when tensions over Taiwan and China's rise led to a decline. However, after Xi Jinping took office, cooperation increased again under Obama. This trend persisted until 2013, indicating a conscious effort by both leaders to establish a strong foundation for cooperation. Research studies in the field of International Relations indicate that although the general bilateral relationship could impact climate cooperation, it does not completely determine the dynamics of cooperation within this particular sector (Brueren, 2021).

Key figures, including Xie Zhenhua, the Special Envoy for Climate Change Affairs of China; John Podesta, the Senior Advisor to President Joe Biden on Climate and Clean Energy; Zhang Gaoli, the Former Vice Premier of China; and Nicholas Stern, the Chair of the Grantham Research Institute on Climate Change and the Environment, convened in 2014 to reinforce climate agreements and promote collaboration among key state actors. President Obama and Zhang Gaoli reached a deal at the UN climate summit, with Podesta completing the agreement in Beijing. The joint declaration was driven by Podesta's belief in consensus with China and the White House's increased focus on climate action. Considering that China leads the world in emissions and the US comes in second, the decisions made by these two nations may have an impact on other emerging countries. There is speculation that the prioritization of wealthy nations above developing ones was impacted by the power plant regulations proposed by the Obama administration in June 2014 (Belis et al., 2015, p. 206). Western countries frequently push for strict international compliance with environmental laws and regulations, which puts pressure on China to harmonize its climate policies with those of other countries. This normative pressure encourages China to increase its climate pledges and set more aggressive goals.

On the other hand, the US's political environment is negatively impacted by China's increasing greenhouse gas emissions and its resistance to international agreements, thereby increasing the risk of catastrophic climate change and sending a message of deceit to other countries. China and the US face comparable difficulties, with the former having large coal reserves that account for 37% of the country's carbon dioxide emissions. Even though the US is

more prepared than many developing nations to weather the effects of climate change, significant emissions reductions are seen as economically disadvantageous in the US. However, some argue that the US's long-term interests are served by aggressive emission reductions, particularly in emerging regions, due to concerns about underprivileged inhabitants' wellbeing and intragenerational concerns (Vandenbergh, 2008, p. 924).

The November 2014 agreement between the US and China has significantly changed the dynamics surrounding climate change on a global scale, most notably by pushing China to play a bigger role. Important individuals like the head of the UNFCCC and the French climate envoy recognized this change and affirmed the agreement's beneficial influence on preparations for the Paris meeting in December 2015. Though initial hopes for the Paris summit were muted, the pact has diverted attention towards other nations, with China and the US being the two greatest producers of greenhouse gas emissions (Belis et al., 2015, 208). A global agreement may be possible, but much depends on the promises made by wealthy and developing countries, as well as their ability to fulfill their obligations (Belis et al., 2015, p. 209).

The US's withdrawal from the Paris Agreement in November 2020 has allowed China and the European Union (EU) to lead global climate action, ensuring the decentralized strategy outlined in the agreement is effectively implemented. However, the EU's ability to take the lead in global climate leadership has been hampered by its involvement in a number of crises, including financial, debt-related, refugee, terrorism, and Brexit debates. While it may be difficult for the EU or China to achieve unilateral climate leadership on their own, there is potential for global climate efforts to advance if the EU and China explore opportunities for bilateral climate leadership or if they adopt a multilateral approach involving multiple stakeholders (Horvli, 2020, p. 55). Through bilateral and multilateral exchanges, best practices can be shared, policies can be coordinated, and cooperative efforts can be made to address common challenges.

It may be argued that China and the EU have both contributed significantly to the shaping of the current climate change system in order to benefit from it. However, they are more likely to be negatively impacted by future uncertainty (Matteis, 2012). The EU and China established the EU-China Partnership on Climate Change in 2005 to enhance climate cooperation, overcoming challenges in geopolitics and human rights. This partnership deepened relations and increased participation in related policy areas, marking the beginning of the 21st century (Horvli, 2020, p. 55). The relationship between China and the European Union has also gained momentum with the

launch of high-tech projects, including a 5-million-euro capacity building project aimed at China's rapidly growing carbon market and an initiative aimed at promoting sustainable urbanization. These programs build on earlier interactions with the Clean Development Mechanism,[22] which faced difficulties gaining EU confidence. Within the EU Emissions Trading System, steps were taken to limit the use of CDM credits (Belis et al., 2015, p. 211).

The EU attempted to influence China's climate policy through discussions and initiatives, but failed due to the international community and US's withdrawal from a normative approach to climate policy during its diplomatic failure in Copenhagen. Despite this, the EU maintained some influence and leadership in climate negotiations, particularly at the 2011 Durban meeting.[23] Consequently, the Durban Platform was founded in Durban and is also referred to as the Ad Hoc Working Group on the Durban Platform for Enhanced Action. The objective was to establish a legally binding convention, instrument, or agreement after COP 21 in Paris in 2015 and begin in 2020 (Belis et al., 2015, p. 211). In January 2021, the Paris Agreement began to implement the goals of the Durban Platform. The agreement established a global climate framework that includes Nationally Determined Contributions, a global assessment, and mechanisms for support, with a current focus on improving commitments, implementing carbon markets, and mobilizing resources.

To sustain its leadership in renewable energy deployment, China may need to acquire advanced green technologies from developed nations, crucial for achieving carbon neutrality and climate resilience, readily available in Western countries. This requirement results from the desire to cut expenses and lessen dependency on fossil fuels. China recognizes that such developmental initiatives cannot remain financially viable without technology improvements. China may need to negotiate with climate partners like the EU to enhance its competitiveness. The EU may influence China's policy choices if it has resources or technologies that China is interested in (Joergensen, 2019, p. 41). China's significant investments in EU markets have increased from $840 million in 2008 to $42 billion in 2016, indicating growing interest in the region. This could be seen as China's attempt to reduce its unequal interdependence with the EU (Joergensen, 2019, p. 42).

[22] Clean Development Mechanism (CDM) under the Kyoto Protocol allows industrialized countries to invest in emission reduction projects in developing countries in order to achieve their own emission reduction targets as well as to contribute to sustainable development.

[23] The Durban Climate Conference, held in Durban, South Africa, in 2011, was the 17th session of the Conference of the Parties (COP 17) to the UNFCCC sought to develop a new, legally enforceable climate accord to be adopted by 2015 and implemented in 2020.

The EU-China climate partnership has the potential to improve cooperation and formalize national and international responses to climate change. This could lead to improved EU-China relations and incentives for national and international climate action. Strong climate leadership from both organizations could help improve the framework for climate governance as the whole. However, opposing views on how to handle climate policy could stand in the way of the EU and China exercising coherent and efficient leadership. Disagreement over governance strategies between the parties could impede such cooperation, even while bilateral climate leadership between the EU and China could direct global climate endeavors and support the institutionalization of climate governance (Horvli, 2020, p. 56).

To effectively coordinate global climate actions, the chapter ends with a plea for strengthening the EU-China climate relationship. It also points out that the EU and China may find it difficult to work together effectively if their positions on climate policy diverge, highlighting the need for better coordinated governance strategies to maximize their combined influence on global climate initiatives. National tensions can be decreased by ensuring that climate policies are in line with trade and economic interests. Cooperation must be maintained by addressing concerns about competitiveness and making sure that climate action does not disproportionately affect any one nation more than others.

Chapter 5

Conclusion

This chapter summarizes the findings from earlier chapters and discusses their theoretical implications. It also reevaluates the research limitations and concludes with suggestions for future research.

The aim of this research was to evaluate China's evolving climate diplomacy strategies and the country's journey toward energy reform. Most of the existing literature has focused on China's unwillingness to engage in international climate negotiations due to its growing economy, particularly during the 1980s and the 1990s. Throughout this period, China had indeed participated in only a limited number of international agreements; but in the 21st century, there has been an apparent shift toward greater cooperation, particularly with the United States and the European Union. Based on the results of this study, I investigated whether collaboration between developing and developed nations, despite their differences, could have a substantial impact on global climate efforts and enable more effective international cooperation. By analyzing the role of international climate agreements, such as the Paris Agreement, and cooperative efforts like the BRICS, it becomes evident that such collaborations can positively influence global emissions reductions and promote the adoption of renewable energy sources.

We will now revisit the initial research questions and summarize the results of the study. The first question addressed the factors that have been pivotal in prompting the significant transformation in China's stance towards energy reform and efforts to mitigate climate change. China's need to balance rapid economic expansion with environmental sustainability is the driving force behind its shift towards energy reform and climate change action. Progress in carbon markets has been spurred by economic development, while China's desire to maintain a positive global image has led it to participate actively in fair international agreements, seeking to resolve concerns regarding perceived coercion and unfair treatment.

The second research question, which explored the main opportunities and challenges China faces when implementing its climate policies given international constraints, was divided into two subsidiary questions: how China's climate diplomacy strategy differs from other countries and how it navigates diplomatic challenges, as well as the implications of China's environmental

diplomacy for its geopolitical and economic ambitions. The country's heavy coal dependency has led to high pollution and carbon emissions, complicating the transition to cleaner energy sources. Despite progress in non-fossil fuels and coal reduction, diversifying energy sources and adopting low-carbon alternatives remain challenging. China is different from other countries in that it places a strong focus on striking a balance between its promises to combat climate change and its own domestic economic objectives. By utilizing its expanding power and encouraging both bilateral and global collaboration, China manages diplomatic difficulties by coordinating its climate objectives with broader economic and geopolitical plans. The implications of China's environmental diplomacy extend beyond domestic policy changes. China's rapid expansion of renewable energy technologies, including solar and wind power, aligns with its commitments to carbon neutrality by 2060 and peak emissions by 2030, thus supporting its global climate leadership and geopolitical and economic ambitions and enhancing its influence in international climate negotiations.

Finally, in relation to the last research question, the challenges associated with financial resources and administration in overcoming shortcomings in environmental sustainability and climate policy effectiveness were examined. We also assessed how China is leveraging international agreements and partnerships to advance its climate agenda and the role these play in shaping its approach to climate governance. China should concentrate on expanding its renewable energy sources, improving sectoral efficiency, and fortifying international climate alliances in order to overcome its issues with environmental sustainability and the efficacy of climate policies. China can create a more resilient and ecologically sustainable economy by encouraging innovation, upholding uniform policy, and implementing sustainable development methods. Through participation in global climate initiatives and alignment of its policies with international standards, China can further enhance its international climate governance role. For example, joining global coalitions such as the Powering Past Coal Alliance would accelerate the transition away from coal by providing policy support, sharing best practices, and encouraging economic diversification in coal-dependent regions.

China is making significant expenditures in solar, wind, and hydrogen technologies in 2024 as it accelerates its shift to renewable energy, strengthening its position as the world's leader in climate diplomacy. Politics is China's top priority when it comes to climate action, but the country's leaders are also seeking to lower energy dependency, modernize its development model,

enhance governance, and support its foreign policy and global strategy. On 1st February 2024, China's special ambassador to the Pacific Islands, Qian Bo, declared that as part of a larger trend of environmental involvement, China is eager to work with Nauru to tackle climate change. Additionally, China is now more committed than ever to the global climate agreements, particularly at COP29. China and Azerbaijan have signed a Joint Declaration, creating new opportunities in the green technology and renewable energy industries. Chinese energy companies are present in Azerbaijan, with plans to buy 200 BYD electric buses between 2025 and 2028. The Middle Corridor and Belt and Road initiatives are benefiting from the growing cooperation and partnerships between Azerbaijan and China.

China's energy reform and climate diplomacy have profoundly impacted international cooperation and global climate policies. This research highlights the country's transition from non-engagement to active participation in international agreements, demonstrating its significant influence on global climate efforts. Several key areas should be explored in future research to further advance this understanding. Comprehensive case studies of China's participation in particular bilateral and multilateral accords, like the BRICS initiatives and the Paris Agreement, could offer insightful information about the dynamics of these partnerships and how they affect the efficacy of policy. Comparative studies of China's and other large nations' approaches to climate diplomacy may also highlight successful initiatives and suggest areas where laws should be strengthened.

It would also be helpful to explore the long-term effects of China's investments in renewable energy technologies, such as wind and solar power, on the country's internal energy market and global markets. Essentially, the study's significance goes beyond the field of climate policy analysis: it offers a broader perspective of China's position in the world and highlights the relationship between a nation's rise to prominence and its responses to contemporary issues. The research directions aim to enhance our understanding of China's role in global climate governance and its broader implications for sustainable development.

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