

EU-China Environmental Cooperation: An Institutional Study

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Abstract

The European Union is one of the earliest regions that commits to environmental protection and is also the conventional leader of global environmental governance. China is now in urgent need to govern environment and a key player in dealing with a number of global environmental challenges, including climate change. Since 1981, when the European Union and China began to contact in the field of environment, environment has been rising on the agenda of their bilateral relations. In 1994, the European Union and China established their first institution for environment. With the support of institutions, their environmental cooperation has stepped into width and depth. Today, environment is deeply involved in the Asia-Europe Meeting and the Annual Summit between the European Union and China, and a number of sectoral institutions on environmental policy, environmental technology, climate change, and energy have been established. Meanwhile, a considerable number of environmental projects have been implemented. The institutions do not only assist in the implementation of environmental projects, but also result in new institutions and the construction of the institutional architecture. However, they also experience some limits. Due to the “low-politics” stance of environment in global politics, the European and Chinese leaders are half-hearted to the practical operation of some of the institutions. In addition, these institutions are also ineffective in dealing with issues with conflictual interests involved, such as climate change and environmental technology transfer.

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List of Abbreviations

ASEM	Asia-Europe Meeting
BCM	Bilateral Consultation Mechanism
BP	British Petroleum
CCS	Carbon Capture and Storage
CDM	Clean Development Mechanism
CNPC	China National Petroleum Corporation
CO ₂	Carbon Dioxide
COP	Conference of the Parties
CPC	Communist Party of China
DevCo	Directorate-General for Development and Cooperation
DG CLIMA	Directorate-General for Climate Action
DG ENER	Directorate-General for Energy
DG ENV	Directorate-General for Environment
DG TREN	Directorate-General for Energy and Transport
EAP	Environmental Action Plan
EC	European Commission
EC2	EU-China Clean Energy Centre
ECAS	EU-China Annual Summit
EEAS	European External Action Service
EEP	Energy and Environment Program
ENGO	Environmental Nongovernmental Organization
ENVforum	Asia-Europe Environment Forum
EU	European Union
EUR	Euro
FP	EU Framework Program
FYP	Five-year Plan
G77	Group 77
GDP	Gross Domestic Product
GHG	Greenhouse Gas
ICARE	Institute for Clean and Renewable Energies

IGEBC	International Conference on Green and Energy-Efficient Building and New Technology and Products Expo
IR	International Relations
LIEP	Liaoning Integrated Environment Programme
MEP	Chinese Ministry of Environmental Protection
MOHURD	Chinese Ministry of Housing and Urban-Rural Development
MOST	Chinese Ministry of Science and Technology
NDRC	Chinese National Development and Reform Commission
NEA	Chinese National Energy Administration
NZEC	Near-Zero Emission Coal
PRC	People's Republic of China
R&D	Research and Development
RMB	Renminbi
S&T	Science and Technology
SCLAO	Chinese State Council Legislative Affairs Office
SCNPC	Standing Committee of the National People's Congress
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USD	US Dollar

Introduction

Environmental issues occupied a notably marginal position on the international agenda until the 1960s. Even though there were evident signs of environmental degradation before then and a significant number of specialists and activists had already voiced important concerns, the need to address environmental challenges was mostly neglected. In 1962, marked by the publication of “Silent Spring” by Rachel Carson, environmental issues began to trigger global attention. The United Nations Conference on the Human Environment (UNCHE) was convened in Stockholm in 1972. The UNCHE is described as “a first taking stock of the global human impact on the environment, an attempt at forging a basic common outlook on how to address the challenge of preserving and enhancing the human environment.”¹ The Declaration of the United Nations Conference on the Human Environment released after the historic event, declared for the first time that “the protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world; it is the urgent desire of the peoples of the whole world and the duty of all Governments.”² The UNCHE generated a profound influence to governments, including the then European Community³ and China.

As the origin of two industrial revolutions, Europe once suffered from environmental contamination. However, the environmental matters did not receive much attention in 1950s and the Treaty of Rome had no regulations on pollution control and environmental protection. By the 1960s, the awareness of environmental protection arose and “western Europe had begun to express concern over degradation of the environment.”⁴ The European Union (EU) participated in and responded promptly to the UNCHE and started to implement its first Environmental Action Plan (EAP) in 1973,

1 Günther Handl, *Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), 1972 and the Rio Declaration on Environment and Development, 1992*, United Nations Audiovisual Library of International Law, United Nations, New York, 2012, p. 1.

2 United Nations, *Report of the United Nations Conference on the Human Environment*, A/CONF.48/14/Rev.1 1972, 2003, p. 3.

3 The European Community was established in 1967 and turned into European Union in 1993. For simplification purpose, I also use European Union to refer to European Community before 1993 in this thesis.

4 Boban Stojanović and Snežana Radukić, EU environmental policy and competitiveness, *Panoeconomicus*, Vol. 53, No. 4, 2006, p. 471.

which covered the period from 1973 to 1977. In this EAP, the EU established 11 principles for its environmental policy, which required the member states to take the interests of developing countries into account in their environmental policies, and required the EU and member states to play a more active and significant role in tackling international environmental issues and cooperate more with the international environmental organizations.⁵ The EU's external environmental policy came into existence simultaneously with the formation of its single environmental policy. For the EU, it not only strongly concerns its environmental issues, but also commits to assist the developing world in protecting the environment.

China also attended the UNCHE in 1972. This conference led to the recognition of environmental issues by the Chinese government for the first time, and promoted the establishment of environmental policies and bureaucratic bodies in China.⁶ In 1973, although China was still sinking in the whirlpool of Cultural Revolution, the first agency dealing with environmental issues—the Leading Group for Environmental Protection was established. The end of Cultural Revolution in 1976 broke a new era of Chinese history and China's environmental protection efforts in specific. In 1982, a bureau to protect the environment was established, and further upgraded to the State Environmental Protection Administration in 1998 and the Ministry of Environmental Protection (MEP) in 2008. On environmental legislation, the Environmental Protection Law (Trial) was issued by the Standing Committee of the National People's Congress (SCNPC) in 1979. Further progress was achieved and the “environmental protection” was added into the Constitution Law for the first time in 1982. In 1989, the Environmental Protection Law took into effect.

Although, since the beginning of reform and opening up, the Chinese government had been attaching importance to environmental governance, economic growth was always the priority of Chinese affairs and put on a higher position in policy and strategy-

5 Council of the European Communities, Declaration of the Council of the European Communities and of the representatives of the Governments of the Member States meeting in the Council of 22 November 1973 on the programme of action of the European Communities on the environment, *Official Journal of the European Communities*, Vol. 16, No. C 112, 20 December 1973, p. 6.

6 Heggelund, Gørild and Ellen Bruzelius Backer, China and UN Environmental Policy: Institutional Growth, Learning and Implementation, *International Environmental Agreements*, Vol. 7, No. 4, 2007, pp. 415–438.

making.⁷ Environment did not begin to climb on China's political agenda until Hu Jintao went into office in 2003.⁸ With the elaboration of the Scientific Development Outlook (科学发展观 Kexue Fazhan Guan), which emphasizes the “comprehensive, coordinated and sustainable development” and the conception of Ecological Civilization (生态文明 Shengtai Wenming), environment was lifted to a higher position among China's political affairs. After Xi Jinping took power in 2013, unprecedented attention has been paid to environmental governance. Building on the policies that his predecessors adopted, Xi is constructing his environmental policy framework today, which is under the conception of ecological civilization. Under Xi's role, an environmental protection storm is sweeping over the Chinese land.

Similar to the EU, China also displayed substantial interest in participating in the global environmental governance, although with different purposes. By playing a role in global environmental governance, China attempts to enhance its international profile in the world arena, and most importantly, introduce as much international aid as possible to assist in its environmental governance. In this context, the EU (which is the forerunner of global environmental governance, and is keen to engage in the environmental governance efforts of other regions and states) and China (which is thirsty of international finance, technology, and experience) implemented fruitful cooperation in the field of environment.

Research Topic

The EU and China established the bilateral relationship in 1975. However, during the Cold War, the EU-China relations were heavily constrained by political and ideological concerns and the relations with two superpowers: the United States (US) and the then

7 China Council for International Cooperation on Environment and Development, *China's Environmental Protection And Social Development (CCICED Task Force Summary Report)*, 2013, p. 1, See:http://english.sepa.gov.cn/Events/Special_Topics/AGM_1/2013agm/speeches2011/201605/P020160524207019648897.pdf.

8 Bernice Lee, The EU and China: Time for a strategic renewal?, *Chatham House ESPO Report*, November 2012, p. 24.

Soviet Union.⁹

Their relations were frustrated by the 1989 Tiananmen incident in short, and then continued to move in depth and width. The EU and China initiated the annual-summit mechanism in 1998 to make their leaders meet regularly. In 2003, the two sides announced the establishment of the “comprehensive strategic partnership.” Since then, they have established three high-level dialogue mechanisms: the high-level political dialogue, the high-level economic and trade dialogue, and the high-level people-to-people dialogue. By 2012, over 60 dialogue mechanisms between the EU and China had been established.¹⁰ Today, China is the EU’s second largest trading partner while the EU has been China’s top trading partner for over ten years. The annual trade volume between the two sides has exceeded 550 billion US dollars and the visits are more than five million annually.¹¹ The close relationship shared by the EU and China is seen as an “emerging axis” by some observers.¹²

Among all the areas of the EU-China relations, environment is not a new theme. As early as 1981, a delegation of European Commission (EC) Directorate-General for Energy (DG ENER) paid a visit to China. In 1995, the EU released its first policy paper on China—A Long-term Policy for China-Europe Relations. In the paper, the EU recognized the potential impact of China’s environment to the global and the EU’s environment, and declared that “we should promote exchanges of information on the environment between the Commission, the Member States and China; and improve communication with other organizations helping China to improve its environment.”¹³ In 1999, the EU and China launched the Liaoning Integrated Environment Programme (LIEP) in China. In 2003, they established an environmental policy dialogue institution at the ministerial level. In 2005, the EU-China Partnership on Climate Change was

9 Nicola Casarini, *The evolution of the EU-China relationship: from constructive engagement to strategic partnership*, Occasional Paper, No. 64, Paris: European Union Institute for Security Studies, 1 October 2006, p. 9.

10 Wen Jiabao, *Set an Example of International Cooperation in the 21st Century*, Ministry of Foreign Affairs, 2012, See: http://www.fmprc.gov.cn/mfa_eng/wjdt_665385/zyjh_665391/t977473.shtml.

11 Ministry of Foreign Affairs, *China’s Policy Paper on the EU: Deepen the China-EU Comprehensive Strategic Partnership for Mutual Benefit and Win-win Cooperation*, 2014, See: http://www.fmprc.gov.cn/mfa_eng/wjdt_665385/wjzcs/t1143406.shtml.

12 David Shambaugh, China and Europe: the Emerging Axis, *Current History*, Vol. 103, Iss. 674, 2004, pp. 243–248.

13 Communication of the Commission 1995, *A long term policy for China-Europe relations*, COM (95) 279 final, 5 July 1995, See: http://www.eeas.europa.eu/archives/docs/china/docs/com95_279_en.pdf.

initiated. The EU-China High-level Energy Meeting was convened in 2012, and three institutions were established at that meeting. After a steady development of over two decades, the EU and China have established a number of environmental institutions, meanwhile, a series of environmental projects were implemented, which involved areas such as the governance of environmental pollution, the education of environmental talents, and the research and development (R&D) of environmental technology. With the rise of environment in EU-China relations, environmental cooperation has been a particularly useful “strategic” key for strengthening EU-China relations.¹⁴

This study takes the institutions in EU-China environmental cooperation as the chief focus. Considering the broad scope of “environment,” I select environmental policy, environmental technology, climate change, and energy as the four areas to be studied in this study. This selection is based on three considerations.

First, environmental policy, environmental technology, climate change, and energy fit the broad sense of “environment” and further the “environmental diplomacy.” “Environment” is a fuzzy term with no consensus on its definition. When trying to analyze the variation of its definition, the authors of “Dictionary and Introduction to Global Environmental Governance,” conclude that “this word [environment] is the most used, yet least understood, term employed in environmental management as well as in the search for sustainable development and global governance.”¹⁵ Demonstrating the broad scope of “environment,” the authors take the definition by United Nations Development Programme (UNDP) on “environmental projects” as an example. For the UNDP, projects that might be marked as “environmental” include: all forestry projects; all soil degradation and salinization projects, minus irrigation activities; watershed and water pollution projects; environmental research and training, but not general agricultural research; integrated community and rural development projects, excluding commercially oriented agricultural and credit fund projects; disaster planning and mitigation; rehabilitation of sea dykes projects; urban and regional development plans; integrated pest management projects; energy efficiency projects (e.g. wood stoves, solar

14 David Scott, Environmental issues as a ‘strategic’ key in EU-China relations, *Asia Europe Journal*, Vol. 7, Iss. 2, 2009, pp. 211–224.

15 Richard Saunier and Richard Meganck, *Dictionary and Introduction to Global Environmental Governance (Second Edition)*, Earthscan, 2012, p. 18.

or wind power).¹⁶ To demonstrate the diversity of the definition of “environment,” the authors further introduce the interpretations by institutions such as the World Bank and the Asian Development Bank, and point out that there are few consensus among these interpretations.¹⁷

Building on the recognition of the variation of definitions of “environment,” “environmental diplomacy” is defined as “the art of negotiating a shared way forward or a settlement to a dispute based on environmental issues that transcend countries and even continents and require international cooperation to solve.”¹⁸ According to the authors, “addressing environmental problems such as global climate change, ozone depletion, ocean and air pollution, and resource use and degradation are frequently cited as issues requiring environmental (scientific) and diplomacy skills.”¹⁹

As environment is so broadly interpreted, it is no surprise that environmental issues are deeply integrated with, and thus generate heavy influence to one another and other issues. As commented by John McCormick, “almost every activity in which humans take part and governments take an interest has an environmental element.”²⁰ Environment might be the most widely-connected area of public policy, it shares close links with such policies as on industry, economy, agriculture, energy, transport, urban and rural development, and education.²¹ In the case of EU-China environmental relations—as revealed by Pietro De Matteis in a study that discusses EU-China cooperation in environment, energy, and climate change altogether—while environmental and energy institutions are developed along two separate paths, the rise of climate change strongly accentuates the linkages between energy security and environmental security. Institutions in these fields share a strong link. This link “touches upon a wide array of issues: from economic growth and poverty eradication to political stability, from energy consumption and pollution to energy efficiency, and from renewable technologies to climate change.”²²

16 *Ibid.* p. 17.

17 *Ibid.* p. 18.

18 *Ibid.* p. 128.

19 *Ibid.* p. 128.

20 John McCormick, *Environmental policy in the European Union*, Basingstoke: Palgrave, 2001, p. 20.

21 *Ibid.*, p. 3.

22 Pietro De Matteis, EU-China Cooperation in the Field of Energy, Environment and Climate Change, *Journal of Contemporary European Research*, Vol. 6, No. 4, 2010, p. 459.

Second, the selection of these four areas fit the environmental bureaucratic structures of the EU and China. The EU and China both established multiple institutions to govern the environment. As an example, consider the energy field. The EU established seven institutions to govern energy and energy-related issues, including DG ENER, DG Climate Action (DG CLIMA), DG Environment (DG ENV), DG Research, DG Trade, DG Development and Cooperation (DevCo), and the European External Action Service (EEAS). Among them, the one that takes the main responsibility for all energy issues and leads the EU's energy policymaking is the DG ENER, while the DG CLIMA and the DG ENV are natural partners of the DG ENER, as there are considerable overlaps in policies and discourses. The DG Research is also important due to its responsibility in governing intellectual property rights and technology transfer issues. In comparison, the DG Trade, the DevCo, and the EEAS are less important. For the DG Trade, energy is not yet part of its consistent trade liberalization strategy, while the DevCo is more an institution that is in charge of implementing cooperation projects. For EEAS, when it aims at being the overall coordinator of the EU's energy governance, it lacks issue-specific competencies.

Analogously, there are also more than one institution that are responsible for China's energy governance. These institutions include: National Energy Administration (NEA), National Energy Commission, Ministry of Science and Technology (MOST), Ministry of Commerce, State Administration of Coal Mine Safety, and a number of state-owned energy enterprises. They play different roles in China's energy governance and the leading institution is the NEA, while the MOST is in charge of the technology, innovation and research, and development related aspects of energy.

In contrast to energy, the bureaucratic structure of environment policymaking and climate change governance are less fragmented in the EU and China. For the EU, the DG CLIMA and the DG ENV are respectively leading the EU's policymaking in climate change and environmental governance, and the DG Research and the DG ENER are their important partners. In addition, the corresponding commissioners of these DGs are also important actors, including Commissioner for Environment, Maritime Affairs and Fisheries, Commissioner for Climate Action and Energy, and Commissioner for Research, Science and Innovation. For China, the main agency that is responsible for environmental policymaking is the MEP. It is not only the chief authoritative body that

is in charge of China's domestic environmental governance, but also takes the main responsibility of conducting international cooperation and communications on environmental protection.²³

Third, these four areas are also recognized by the EU and Chinese authorities as areas with strong inter-links. Some major documents in the EU-China relations highlighted their cooperation in these areas together, particularly environmental protection, climate change, and energy. For example, the two sides released the EU-China 2020 Strategic Agenda for Cooperation at the 16th EU-China Annual Summit (ECAS) in 2013. This agenda is formulated to guide the development of EU-China relations by 2020. In this document, within the sphere of "Sustainable Development," the EU and China agreed that they "face the common task of achieving innovative, inclusive and sustainable development," and agreed "that innovation has an important contribution to make to achieve sustainable development."²⁴ To reach the target of sustainable development, they raised ten proposals including: science, technology and innovation; space and aerospace; energy; urbanization; climate change and environmental protection; ocean; regional policy; social progress; public policy; cooperation on global development. In this list of proposals, one can find out that the EU and China discussed environmental protection, science and technology (S&T), climate change, and energy together, as sectors of the broad theme of sustainable development. Particularly, the EU and China emphasized the role of S&T in reaching sustainable development and put "science, technology and innovation" as the No.1 proposal.²⁵ In 2014, China released its second and also the most recent policy paper on the EU. In this paper, climate change, energy, and environmental protection were also elaborated together.²⁶

23 Ministry of Environmental Protection: Mandates, See: http://english.sepa.gov.cn/About_SEPA/Mandates/.

24 EU-China 2020 Strategic Agenda for Cooperation, p. 9, See: http://eeas.europa.eu/archives/docs/china/docs/eu-china_2020_strategic_agenda_en.pdf.

25 *Ibid.* pp. 9–14.

26 Ministry of Foreign Affairs, *China's Policy Paper on the EU: Deepen the China-EU Comprehensive Strategic Partnership for Mutual Benefit and Win-win Cooperation*, 2014, See: http://www.fmprc.gov.cn/mfa_eng/wjdt_665385/wjzcs/t1143406.shtml.

Research Questions

It has been over three decades since the EU and China expanded their cooperation to the environmental field. During these decades, by establishing institutions and implementing environmental projects, their cooperation has achieved remarkable consequences. Today, environment is becoming an increasingly significant area in EU-China relations. This study aims to analyze the EU-China environmental cooperation from an institutionalist perspective. By doing so, I would like to shed some light on four questions:

- 1) What are the institutions in EU-China environmental cooperation? And how do they come into existence?
- 2) What are the roles of institutions in EU-China environmental cooperation? And how do they promote EU-China environmental cooperation?
- 3) What are the limits of institutions in EU-China environmental cooperation?
- 4) Is China's environmental policymaking influenced by the EU's engagement?

Research Methods

Suitable methods are crucial to a research. They can help the researcher reach the research targets in a more scientific and convincing way. In this study, multiple methods including documentary analysis, case study, and elite interview are applied.

Documentary Analysis

This study is most reliant on the documentary analysis method. The volume of literature that is relevant to this study varies with themes. For example, the environmental policies of the EU and China have been sufficiently studied and numbers of works have been produced. In contrast, the study on their bilateral environmental cooperation is yet to be developed, and neither on their energy cooperation. Thus, the writing of these two themes will have to mainly rely on original resources, such as the bilateral treaties,

government publications, and reports of cooperation projects, instead of academic works.

More specifically, the materials to be exploited in the study include four categories. First, the official documents released by the EU and Chinese authorities. For example, with regard to the EU, the EAPs that have been released since 1973 and the core documents in the formation of the EU will be underlined. The second category of sources to be utilized in this study includes the documents released jointly by the EU and China. For example, since the ECAS was launched in 1998, 18 meetings had been convened by 2016. The joint declarations and news bulletins after these meetings recorded the evolution of the role of environment in EU-China relations. In addition, international organizations—both governmental and nongovernmental organizations (NGOs), are playing prominent roles in international environmental governance. The data produced and the reports published by these organizations are of substantial value to this study. For example, when evaluating China's energy consumption, the data and reports by the British Petroleum (BP) and International Energy Agency are to be learned. The last but not least information source to be addressed in this study includes the news and reports by the authorized media. For example, news and reports released by Xinhuanet, People's Daily, and China Daily which are recognized as official media will be examined and utilized in the case of China. Although a considerable number of original sources are learned in the study, it would not be ample to achieve the goal of understanding the EU and China's environmental cooperation profoundly. Therefore, this study also makes extensive use of academic documentary sources and tries to identify the most widely quoted works in academia.

Case Study

With apparent advantages, case study has been one of the most popular research methods in social sciences.²⁷ As introduced earlier, environment has always been a very broad topic, and analyzing the four topics altogether without emphasizing on a particular one might lead the discussion to emptiness. Considering this, a case study is needed which might help narrow the discussion and lead the study to depth.

27 Andrew Bennett, Case Study Methods: Design, Use, and Comparative Advantages, in Detlef Sprinz and Yael Wolinsky (eds.), *Models, Numbers, and Cases-Methods for Studying International Relations*, Ann Arbor: University of Michigan Press, 2004, pp. 19–55.

In this study, I select EU-China energy cooperation to conduct the case study. This is due to five considerations. First, energy consumption is the fundamental cause of environmental issues, including global warming, smog, and most of the others—if not all. Second, in the course of the history of EU-China environmental cooperation, energy is the first area that the EU and China interacted in 1981, and more importantly, it is also the first field that was institutionalized in 1994. Therefore, energy shares both the most symbolic and practical significance in the history of EU-China environmental cooperation. Third, energy is not only an environmental issue, but also a political, economic, and security issue. Also, due to the large volume of the EU and Chinese economies and thus their energy production and consumption, the impact of their cooperation on energy is not only bilaterally, but also globally. Therefore, using energy as the case can demonstrate the significance of environment in EU-China relations, and broaden the horizon of this study. Fourth, the diversity of “energy” also makes it a suitable topic for case study. Compared with environmental policy, environmental technology, and climate change, one feature of energy is that it has a number of subtopics (such as clean energy, and nuclear energy), which makes the analysis of institutions around these issues possible. Fifth, other three themes are less suitable for a case study. Among them, the EU-China climate change cooperation is very newly institutionalized, the environmental policy is a marginal issue, while the EU-China environmental technology cooperation is a very broad area which is difficult to draw a border. The gravest constrain of these three areas are that they do not share a sufficient number of subtopics, which results in the difficulties of further exploring the EU-China environmental institutions. These factors make climate change, environmental policy, and environmental technology unsuitable to conduct a case study.

Elite Interview

Although elite interview is a widely adopted research method in social sciences, including international relations (IR), there is no clear-cut definition on “elite.” In his “classic book”²⁸—“Elite and specialized interviewing,” Dexter notes that elites are people who are “the influential, the prominent, and the well informed.”²⁹ They are

28 Beate Littig, Interviewing the Elite-Interviewing Experts: Is There a Difference?, in Alexander Bogner, Beate Littig and Wolfgang Menz (eds.), *Interviewing Experts*, Palgrave Macmillan, 2009, p. 99.

29 Lewis Anthony Dexter, (2006/1969) *Elite and specialized interviewing, with a new introduction by*

“people in important or exposed positions may require VIP interviewing treatment on the topics which relate to their importance or exposure.”³⁰ His definition is criticized as have failed to analyze why such individuals have attained the exalted tag of an elite.³¹ On “elite interview,” Dexter describes it as “an interview with any interviewee—and stress should be placed on the word ‘any’—who in terms of the current purposes of the interviewer is given special, nonstandardized treatment.”³² He further explains “special, nonstandard treatment” that: 1) stressing the interviewee’s definition of the situation; 2) encouraging the interviewee to structure an account of the situation; 3) letting the interviewee introduce to a considerable extent (an extent which will of course vary from project to project and interviewer to interviewer) his notion of what he regards as relevant, instead of relying upon the investigator’s notions of relevance.³³

As any other research methods, elite interview also suffers some challenges and limits. Summarized by David Richards, the particular challenges of taking an elite interview include: the access to the interviewees, the reliability of interviewees, and the relationship between the interviewer and the interviewee. However, the advantages one might achieve from interviews are also remarkable. As David explains, interviews can 1) help in interpreting documents, or reports, particular if you gain access to the authors responsible for putting together a relevant document or report; 2) help in interpreting the personalities involved in the relevant decisions and help explain the outcome of events; 3) provide information not recorded elsewhere, or not yet available (if ever) for public release; 4) help you to establish networks, or provide access to other individuals, through contact with a particular interviewee; 5) help you to understand the context, set the tone, or establish the atmosphere, of the area you are researching.³⁴

I apply elite interview in this study as a supplementary method. By doing so, I intend to collect information that are fresh or unavailable from public sources. The interviewees

Ware, A. and Sánchez-Jankowski, University of Essex, Colchester: ECPR Press-ECPR classics, first edition (1969) Evanston: Northwestern University Press, p. 19.

30 *Ibid.* p. 5.

31 David Richards, Elite interviewing: Approaches and pitfalls, *Politics*, Vol. 16, Iss. 3, 1996, pp. 199–204.

32 Lewis Anthony Dexter, (2006/1969) *Elite and specialized interviewing, with a new introduction by Ware, A. and Sánchez-Jankowski*, University of Essex, Colchester: ECPR Press-ECPR classics, first edition (1969) Evanston: Northwestern University Press, p. 18.

33 *Ibid.*

34 David Richards, Elite interviewing: Approaches and pitfalls, *Politics*, 1996, Vol. 16, Iss. 3, pp. 199–204.

include the EC officials, IR researchers from universities and think tanks, and individuals that occupy positions that are relevant to this study.

Part I. Literature Review and Theoretical Framework

Chapter I. Literature Review

It has been explained that the major focus of this study is the institutions in EU-China environmental cooperation. To conduct such an analysis, four subtopics are recognized in this study: environmental policy, environmental technology, climate change, and energy. Among them, energy is taken as the case study. However, the EU's environmental policy and global leadership, China's environmental policy and diplomacy are discussed before the analysis of institutions. This review aims at analyzing the literature related to the topics in this study, and thus outlining the knowledge background for the readers. The organization of this literature review echoes the structure of this thesis.

1. The EU's Environmental Policy and Global Leadership

The EU's environmental policy and global leadership are not new for IR researchers. While the writing of this chapter learns considerably from the existing academic studies, it also receives knowledge from the original resources, particularly the EU official documents.

1.1 The Evolution of the EU's Environmental Policy

It is usually helpful to divide it into a few phases to discuss the evolution of the EU's environmental policy. On the division of the evolution of the EU's environmental policy, researchers usually take the year of 1957 when the Treaty of Rome was signed, the year of 1973 when the first EAP was formulated, the year of 1987 when the SEA went into force, and the year of 1993 when the TEU took into effect as major landmarks. Building on these landmarks, some arguments on the division of the evolution of EU's environmental policy had been raised. For example, Philip Hildebrand divides the evolution of EU's environmental policy into three phases. According Philip, the first phase ranges from 1957 to 1972 and is described as “a time of pragmatic measures as

opposed to proper policy.”¹ The second phase begins with the approval of the first EAP in 1973 and ends in 1985, when the SEA was formulated. This phase, in the eyes of the author is “an active one that undoubtedly furthered environmental protection in the European Community,”² although is accompanied with a considerable degree of uncertainty. The third phase, which is tagged as the initiative phase, covers the period from 1985 to 1992. This phase distinguishes itself from the second phase by the formal legal foundation expressed in the SEA.³ In addition to the study by Philip Hildebrand, a four-phase division was raised by John McCormick in “Environmental Policy in the European Union,” published in 2001. In this book, John discusses the evolution of EU’s environmental policy in four phases: 1957–1972, 1973–1986, 1987–1992, and 1993–present (2001). He notices that in the first phase of EU’s environmental policy, the EU had been focusing on the common market while environment was never a serious concern. Particularly for the national governments in Europe in the 1950s, “environment was a policy issue whose significance varied from marginal to non-existent.”⁴ In the following three phases, the EU’s environmental policy experienced an “environmental revolution” (1973–1986), the establishment of legal competence (1987–1992), and an era of consolidation (1993–2001), respectively.⁵

The EU’s environmental policy also attracted the interest of Chinese researchers and some works have been produced, such as “Study on EU Environmental Policy and Law” by Cai Shouqiu, published in 2002. Although this book is generally a discussion on the EU’s environmental law, there are also words discussing the evolution of the EU’s environmental policy, the EU’s environmental institutions, and EAPs. In this book, Cai argues that the evolution of the EU’s environmental policy went through four phases. The first phase departs when the Treaty of Rome went into force (or the establishment of European Community) in 1958 and ends with the opening of the Paris Summit in 1972, when the draft of the first EAP was proposed. The second phase departs from 1972 and ends in 1987 when the SEA went into force, while the third phase follows and ends in 1992 when the TEU was signed. The fourth phase takes off in 1992 and lasts

1 Philip Hildebrand, *The European Community’s Environmental Policy, 1957 to ‘1992’: From Incidental Measures to an International Regime?*, in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 20.

2 *Ibid.*, p. 29.

3 *Ibid.*, p. 32.

4 John McCormick, *Environmental policy in the European Union*, Basingstoke: Palgrave, 2001, p. 43.

5 *Ibid.* pp. 41–68.

until the book was published.⁶ Another work in Chinese by Xiao Zhu'an takes the signing of the SEA and TEU as the two milestones of the evolution of the EU's environmental policy and divides it into three phases: 1973–1987; 1987–1993 and 1993–present (2002).⁷

1.2 The External Dimension of the EU's Environmental Policy

Compared with the study on the EU's internal environmental policy, the external dimension of the EU's environmental policy is less developed. Among the existing studies in this area, some of them are particularly on the EU's external environmental policy, while some of them are discussions on this issue under a broader theme.

One of the most prolific contributors to this literature is John Vogler, who is the author of “The External Environmental Policy of the European Union,” “The European Union as a Global Environmental Policy Actor: Climate Change” and “The European Contribution to Global Environmental Governance.” In “The External Environmental Policy of the European Union,” John Vogler discusses the origin of EU's external environmental policy, the EU's relations with international organizations, the ways that the EU negotiates, and evaluates the EU's role in global environmental politics.⁸ In “The European Union as a Global Environmental Policy Actor: Climate Change,” John Vogler identifies four characteristics that one might expect an international actor to exhibit: autonomy, volition, negotiating capability, and the ability to deploy policy instruments, and discusses them with the EU's specific case.⁹ In “The European Contribution to Global Environmental Governance,” the author discusses briefly on the EU's historical role in global environmental governance, the EU's legal and actual capacity to act and its ways to participate in the global environmental governance.¹⁰ In

6 Cai Shouqiu (ed.), *欧盟环境政策法律研究 (Oumeng Huanjing Zhengce Falv Yanjiu; Study on EU Environmental Policy and Law)*, 武汉大学出版社 (Wuhan Daxue Chubanshe; Wuhan University Press), 2002, pp. 72–84.

7 Xiao Zhu'an, 试论欧盟环境政策的发展 (Shilun Oumeng Huanjing Zhengce de Fazhan; The Development of EU Environmental Policy), *欧洲 (Ouzhou; Chinese Journal of European Studies)*, No.3, 2002, pp. 75–112.

8 John Vogler, The External Environmental Policy of the European Union, *Yearbook of international cooperation on environment and development*, 2003/2004, pp. 65–71.

9 John Vogler, The European Union as a global environmental policy actor Climate change, in Rüdiger Wurzel and James Connelly (eds.), *The European Union as a Leader in International Climate Change Politics*, London and New York, NY: Routledge, 2011, pp. 21–37.

10 John Vogler, The European contribution to global environmental governance, *International Affairs*, Vol. 81, Iss. 4, 2005, pp. 835–850.

addition, there are more works developed in this area, such as “The External Environmental Policy of the European Union: EU and International Law Perspectives,” edited by Elisa Morgera, and *The Future of EU Environmental Policy: Challenges & Opportunities*, a report by Sirini Withana and David Baldock.

In the Chinese academia, IR researchers also devote themselves into this area. For example, Wang Mingjin argues that the EU’s motives of involving in the global environmental governance are three-fold: establishing the EU’s leadership and moral authority in global environmental governance, winning the speaking rights in the global environmental politics, and making rules that are beneficial to the EU to enhance its comprehensive competitiveness. Wang further analyzes the EU’s practice in the global environmental governance from institutionalist, economic, and legal perspectives, and evaluates the outcomes of the EU’s practice.¹¹

1.3 The EU’s Leadership in Global Environmental Governance

To examine the EU’s leading role in global environmental governance, this section focuses on climate change, which is now the most prominent global environmental issue. A sizable number of studies have been generated on the evolution of the EU’s climate change policy. These studies are largely built on recognizing the landmark events in the history of climate change politics. The first landmark in climate change politics is the United Nations Framework Convention on Climate Change (UNFCCC) adopted at the 1992 United Nations Conference on Environment and Development (UNCED, Rio Summit). Within this framework, the Conference of the Parties (COP) mechanism was established, and since 1995, parties of the UNFCCC have been meeting annually to “assess the effects of the measures taken by Parties and the progress made in achieving the ultimate objective of the Convention”¹². Other prominent events in climate change politics include the Kyoto Protocol adopted in 1997, the Copenhagen Conference (COP 15) convened in 2009, and the Paris Agreement released in 2015.

Based on these landmarks, Louise van Schaik divides the evolution of the EU’s climate

11 Wang Mingjin, 浅析欧盟对外环境政策及其实践 (Qianxi Oumeng Duiwai Huanjing Zhengce Jiqi Shijian; The EU’s External Environmental Policy and Practice), *欧洲研究 (Ouzhou Yanjiu; Chinese Journal of European Studies)*, No. 5, 2008, pp. 33–46.

12 United Nations Framework Convention on Climate Change—Conference of the Parties (COP), See: <http://unfccc.int/bodies/body/6383.php>.

change policy into four phases: the first phase addresses the negotiations of the UNFCCC and the Kyoto Protocol (late 1980s until 1997); the second phase ranges from 1997 to 2005 and concerns the withdrawal of the US from the Kyoto Protocol, the negotiations of the Marrakech Accords that settle its implementation details, and the saving of the Kyoto Protocol leading to its entry into force in 2005; the third phase ranges from 2005 to 2009, when climate change stood sky high on the EU's political agenda, while the fourth phase is ongoing since 2009.¹³ A four-phase division on the EU's climate change policy is also developed by Rüdiger Wurzel and James Connelly: 1) late 1980s–1992: formation and formulation phase; 2) 1992–2001: Kyoto Protocol negotiation phase; 3) 2001–2005: Kyoto Protocol rescue phase; and 4) since 2005: implementation phase and Kyoto Protocol follow-up agreement negotiation phase.¹⁴

Another example is given by Karin Bäckstrand and Ole Elgström, who argue in a work published in 2013 that the evolution of EU's climate change policy should be examined in four phases: negotiating the climate convention and the Kyoto Protocol (1988–1997), saving the Kyoto Protocol (1998–2005), the post-Kyoto phase (2006–2009), and the post-Copenhagen era (2009–2012).¹⁵ As the Paris Agreement was only adopted over one year, the academic work that put this event into sphere is still rare. One of the representative studies that discuss the EU's leadership in Paris Conference (COP 21) is “Assessing the European Union's Global Climate Change Leadership: from Copenhagen to the Paris Agreement,” published in February 2017. In this paper, the authors assess the evolution of the EU's leadership from COP 15 to COP 21.¹⁶ The most appealing content of this paper to my study is the survey on the leadership recognition among key parties.

The diversity of the divisions of the EU's climate change policy does not limit to the introduction above. For example, recognizing the different stages of the evolution of the

13 Louise van Schaik, The European Union and the Climate Change Regime, in Knud Erik Jørgensen and Katie Verlin Laatikainen (ed.), *Routledge Handbook on the European Union and International Institutions Performance, Policy, Power*, Routledge, 2013, p. 358.

14 Rüdiger Wurzel and James Connelly, Introduction: European Union political leadership in international climate change politics, in Rüdiger Wurzel and James Connelly (eds.), *The European Union as a Leader in International Climate Change Politics*, London and New York, NY: Routledge, 2011, p. 4.

15 Karin Bäckstrand and Ole Elgström, The EU's role in climate change negotiations: from leader to 'leadiator', *Journal of European Public Policy*, Vol. 20, Iss. 10, 2013, pp. 1369–1386.

16 Charles Parker, Christer Karlsson and Mattias Hjerpe, Assessing the European Union's global climate change leadership: from Copenhagen to the Paris Agreement, *Journal of European Integration*, Vol. 39, Iss. 2, 2017, pp. 239–252.

United Nations (UN) climate regime, Schunz Simon divides the EU's foreign climate policy into four phases: creating the UN climate regime (1991–1992), consolidating the UN climate regime (1993–1997), maintaining the UN climate regime (1998–2004), and post-2012 reform efforts in the UN climate regime (2005–2009).¹⁷ Zhou Jian and He Jiankun divide the EU's role in global climate change politics into three phases: promoting the Kyoto Protocol to enter into force (the late 1990s–2004), promoting the implementation of the Kyoto Protocol (2005–2007), and preparing the post-Kyoto negotiations (2008–present [2009]).¹⁸

Compared with the evolution of the EU's environmental policy, the EU's leading role in climate change is a more appealing topic for researchers, particularly the question “why and how the EU leads the international efforts to tackle climate change?” The multiple motives of the EU's pursuit of a leading role in climate change have been recognized by scholars.¹⁹ According to a review study by Xie Laihui, the arguments on the theme can be classified into three categories. The first category of arguments is represented by John Schmidt. In “Why Europe Leads on Climate Change,” he argues that it is the unique political cultures and historical experiences and the European commitment to the social welfare state that are pushing the EU to the leadership in climate change. He believes that “the EU approach to global warming says a great deal about how Europeans see the world and what they would like to see done with it.”²⁰ The second category of arguments that Xie classifies is tagged “political strategy,” which

17 Schunz, Simon, Explaining the evolution of European Union foreign climate policy: A case of bounded adaptiveness, *European Integration online Papers (EIoP)*, Vol. 16, 2012, Article 6, See: <http://eiop.or.at/eiop/pdf/2012-006.pdf>.

18 Zhou Jian and He Jiankun, 欧盟气候变化政策及其经济影响 (Oumeng Qihou Bihuan Zhengce Jiqi Jingji Yingxiang; The EU's Climate Change Policy and its Economic Impacts), *现代国际关系 (Xiandai Guoji Gunaxi; Contemporary International Relations)*, Vol. 19, No. 2, 2009, pp. 38–43.

19 More discussions on the motives of EU's leadership, please refer to: Li Minghui, 欧盟在国际气候谈判中的政策立场分析 (Oumeng zai Guoji Qihou Tanpan zhong de Zhengce Lichang Fenxi; EU's Position in the International Negotiations on Climate Change), *世界经济与政治 (Shijie Jingji yu Zhengzhi; World Economics and Politics)*, No. 2, 2010, pp. 48–66; Li Minghui, 欧盟在国际气候政治中的行动战略与利益诉求 (Oumeng zai Guoji Qihou Zhengzhi zhong de Xingdong Zhanlue yu Liyi Suqiu; The Strategy and Interests of the EU in Global Climate Change Politics), *世界经济与政治论坛 (Shijie Jingji yu Zhengzhi Luntan; Forum of World Economics & Politics)*, No. 2, 2012, pp. 105–117; Fu Cong, 欧盟应对气候变化的全球治理: 对外决策模式与行动动因 (Oumeng Yingdui Qihou Bianhua de Quanqiu Zhili: Duiwai Juece Moshi yu Xingdong Dongyin; Global Climate Governance of the EU: Foreign Policy Decision-making Model and Motivations for Behaviors), *欧洲研究 (Ouzhou Yanjiu; Chinese Journal of European Studies)*, Vol. 30, No. 1, 2012, pp. 65–80; Sebastian Oberthür and Claire Roche Kelly, EU Leadership in International Climate Policy: Achievements and Challenges, *The International Spectator*, Vol. 43, No. 3, 2008, pp. 35–50.

20 John Schmidt, Why Europe leads on climate change, *Survival*, Vol. 50, Iss. 4, 2008, p. 94.

emphasizes the EU's recognition of the significance of the climate change leadership in world politics and its desire to this leadership.²¹ The third category of arguments that Xie identifies in his paper is represented by "The Interest-Based Explanation of International Environmental Policy." In this article, the authors develop an interest-based approach to explain the position taken by governments on the protection of international environment. This interest-based explanation is a unit-level explanation of IR which "focuses on those domestic factors that shape a country's position in international environmental negotiations."²² Certainly, this approach also fits the European case. Building on the review and analysis of these works, Xie argues that a comprehensive framework should be constructed to understand the EU's foreign climate change policy. This framework should contain three elements: the sense of crisis due to the EU's high degree of reliance on imported energy, the pursuit of honor in climate change diplomacy to enhance its cohesion in the process of integration, and the economic and technological advantages it is enjoying in resisting climate change. Among these elements, the economic and technological advantages that the EU enjoys are particularly underlined by the author.²³

Xie's work is arguably valuable to understand the EU's pursuit of the leadership in climate change politics, however, another significant argument on this topic raised by Miranda Schreurs and Yves Tiberghien was unfortunately neglected by Xie. In "Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation," published in 2007, Miranda Schreurs and Yves Tiberghien examined the roles of the various political factors in the EU, such as the EC, European Parliament, several member states, the public opinion, and green parties. Based on this examination, they argue that "EU leadership has been driven by a combination of factors,"²⁴ it is "the result of a dynamic process of competitive multi-level reinforcement among the

21 *Ibid*; Bo Yan, "京都进程"的领导者为什么是欧盟而不是美国? ("Jingdu Jincheng" de Lingdao zhe Weishenme shi Oumeng er Bushi Meiguo?; The Leader of the Kyoto Process: Why the EU instead of the U.S.), *国际论坛* (*Guoji Luntan; International Forum*), No. 5, 2008, pp. 1-7.

22 Detlef Sprinz and Tapani Vaahtoranta, The Interest-Based Explanation of International Environmental Policy, *International Organization*, Vol. 48, No. 1, 1994, p. 78.

23 Xie Laihui, 为什么欧盟积极领导应对气候变化 (Weishenme Oumeng Jiji Lingdao Yingdui Qihou Bianhua?; Why the EU Led the World against Climate Change?), *世界经济与政治* (*Shijie Jingji yu Zhengzhi; World Economics and Politics*), No. 8, 2012, pp. 72-91.

24 Miranda Schreurs and Yves Tiberghien, Multi-Level Reinforcement: Explaining European Union Leadership in Climate Change Mitigation, *Global Environmental Politics*, Vol. 7, No. 4, 2007, p. 40.

different EU political poles within a context of decentralized governance.”²⁵

2. China’s Environmental Policy and Diplomacy

The study of China’s environmental policy and diplomacy in the Chinese academia did not appear until the late 1980s and early 1990s, when environment became a more significant issue for the Chinese government and people. Since then, this topic has been becoming increasingly popular, and accordingly, numerous works have been produced.

2.1 The Evolution of China’s Environmental Policy

With the emergence of China’s environmental issues and the increasing attention paid by the Chinese authority, the academic study on China’s environmental policy also saw a rise in the last few decades. Today, there are at least three major arguments on the evolution of China’s environmental policy. The first argument is represented by Zhou Shengxian, who was the Chinese minister of environmental protection between 2008 and 2015. According to Zhou, the evolution of China’s environmental policy should be divided into five phases: 1972–1978, 1978–1992, 1992–2002, 2002–2012, and 2012–present (2013).²⁶

The second representative argument is raised by Qu Geping, who is regarded as the “father of Chinese environmental protection.”²⁷ Qu attended the UNCHE in 1972 as a member of the Chinese delegation, and was the first director of the Chinese Bureau of Environmental Protection. His book—“Dreams and Expectations: The History and Future of China’s Environmental Protection” is widely viewed as the most authoritative work that elaborates the evolution of China’s environmental policy and diplomacy. In that book, Qu reviews the evolution of China’s environmental policy in three phases: the initiation of China’s environmental protection (1970–1978), the development of

25 *Ibid.* p. 22.

26 Zhou Shengxian, 我国环境保护形势与对策 (Woguo Huanjing Baohu Xingshi yu Duice; The Situation and Countermeasures of China’s Environmental Protection), 2013, See: <http://politics.people.com.cn/n/2013/0711/c1001-22155267.html>.

27 Bernhard Glaeser, The Environmental Impact of Economic Development, in Terry Cannon and Alan Jenkins (eds.), *The Geography of Contemporary China: The Impact of Deng Xiaoping’s Decade*, London and New York: Routledge, 1990, p. 253.

China's environmental protection (1979–1991), and the further development of China's environmental protection (1992–present [2000]).²⁸

Another division on the evolution of China's environmental policy is proposed by Bao Maohong, from Peking University. Bao contends that the evolution of China's environmental policy experienced three stages since 1972. The first stage—a formative stage, ranges from 1972 to the late 1970s. During this stage, “the main characteristic of the Chinese environmental policy was to realise an unrealistic objective by practicing administrative and planning methods.”²⁹ The second stage—a development stage, covers the period from 1978 (when a new Chinese Constitution Law was passed) to the late 1990s. Some features are recorded in this stage: legalization of environmental protection, the application of economic instrument, and market principles. In addition, during this stage, the participation of the Communist Party of China (CPC) at all levels strengthened the enforcement of environmental policies, and the Chinese environmental protection was also transforming from the simple treatment to harmonized development. The third stage—a stage of rapid improvement, ranges from the late 1990s to present (2006).³⁰ Other studies on this topic might include “Environmental Policies in China: Evolvement, Features and Evaluation” (2007) by Zhang Kunmin, Wen Zongguo and Peng Liying, “China's Environmental Policy: A Critical Survey” (2010) by Gregory Chow, and “The Evolution of Environmental Policy in the People's Republic of China” (2011) by Richard Louis Edmonds.

2.2 The Evolution of China's Environmental Diplomacy

In the literature of China's environmental diplomacy, the implementation of the reform and opening up policy in 1979, and the first elaboration of the term “environmental diplomacy” (环境外交 Huanjing Waijiao) in 1989 are popularly taken as the landmarks in the course of the evolution of China's environmental policy. For example, in “The Development of China's Environmental Diplomacy” by Cai Shouqiu and Mark Voigts, the authors divide the evolution of China's environmental diplomacy into three

28 Qu Geping, *梦想与期待: 中国环境保护的过去与未来 (Mengxiang yu Qidai: Zhongguo Huanjing Baohu de Guoqu yu Weilai; Dreams and Expectations: the Past and Future of China's Environmental Protection)*, 中国环境科学出版社 (Zhongguo Huanjing Kexue Chubanshe; China Environmental Science Press), Beijing, 2000.

29 Bao Maohong, The evolution of environmental policy and its impact in the People's Republic of China, *Conservation and Society*, Vol. 4, No. 1, 2006, p. 40.

30 *Ibid.* pp. 36–54.

phases: 1949–1972 (when political and economic issues occupied China’s agenda and left environment with no position), 1972–1979 (when the first steps of China’s environmental diplomacy were recorded), 1979–present (1993) (when China began to participate in the world environmental governance more frequently and earned its position in this arena).³¹

Wang Zhijia, who is the author of “China Environmental Diplomacy (I/II),” agrees with Cai Shouqiu and Mark Voigts that China’s environmental diplomacy should be divided into three phases. However, he takes different events as milestones of China’s environmental diplomacy. He argues that the three phases that China’s environmental diplomacy went through are: 1) the initiation of China’s environmental diplomacy (1972–1978); 2) the development of China’s environmental diplomacy (1979–1992), and 3) the maturation of China’s environmental diplomacy (1992–present [1999]).³²

Zhang Haibin, who is a professor of Peking University, is one of the first Chinese researchers on China’s environmental policy and diplomacy studies. In “A Discussion on China’s Environmental Diplomacy” published in 1993, he argues that the world environmental diplomacy had risen, and put forward three targets that China’s environmental diplomacy should intend to reach. In his another article—“The Evolution of China’s Environmental Diplomacy,” published in 1998, he put his discussion on China’s environmental diplomacy into two phases: 1972–1988, which witnessed the emergence of China’s environmental diplomacy; 1989–present [1998], during which China’s environmental diplomacy experienced a rapid development.³³

31 Cai Shouqiu and Mark Voigts, The development of China’s environmental diplomacy, *Pacific Rim Law & Policy Journal*, Vol. 3, 1993, pp. 17–42.

32 Wang Zhijia, *中国环境外交 (上/下)* [*Zhongguo Huanjing Waijiao (Shang/Xia); China Environmental Diplomacy (I/II)*], 中国环境科学出版社 (Zhongguo Huanjing Kexue Chubanshe; China Environmental Science Press), Beijing, 1999. The diversity of arguments on the division of China’s environmental diplomacy does not restrict on the introduction above. For example, Huang Quansheng takes the year of 1972, 1978, 1992 and 2006 as the landmarks and divides China’s environmental diplomacy into four phases: 1972–1978, 1979–1992, 1992–2005, and 2006–present (2008), See: Huang Quansheng, *环境外交综论 (Huanjing Waijiao Zonglun; The Comprehensive Study on Environmental Diplomacy)*, 中国环境科学出版社 (Zhongguo Huanjing Kexue Chubanshe; China Environmental Science Press), Beijing, 2008, pp. 213–220. Another argument on the division of China’s environmental diplomacy takes the year of 1992 as the only turning point and divides the evolution of China’s environmental diplomacy into two phases 1972–1992 and 1992–present (2011). See: Fan Yaxin, *冷战后中国环境外交的历史进程 (Lengzhan hou Zhongguo Huanjing Waijiao de Lishi Jincheng; The Historical Process of China’s Environmental Diplomacy after the Cold War)*, China University of Political science and Law, 2011, PHD thesis.

33 Zhang Haibin, *中国环境外交的演变 (Zhongguo Huanjing Waijiao de Yanbian; The evolution of*

2.3 China's Roles and Motives in Global Environmental Politics

Echoing the discussion on the EU's leadership in global environmental politics, I also take climate change as the focus in this section. With China's rise in global climate change negotiations, China's climate change policy also stimulated interest to the academia. Some representative works on China's climate change policy are worth of being introduced here. The first one is "Environmental Change and the Asia Pacific: China Responds to Global Warming" by Harris Paul and Yu Hongyuan. In this paper, the authors identify three distinct stages of China's official participation in climate change negotiations. The first stage ranges from 1990 to mid-1992, the second stage covers the years from 1992 to late 1997, and the third stage lasts from 1997 to present (2005). This division is developed by recognizing the most important developments in climate change regime: the UNFCCC adopted in 1992 and the Kyoto Protocol passed in 1997.³⁴ Another two works are products of Fridtjof Nansen Institute: "China in the International Politics of Climate Change: A Foreign Policy Analysis" by Ida Bjørkum, and "China's Climate-Change Policy 1988–2011: From Zero to Hero?" by Iselin Stensdal. In the former, based on the argument raised by Harris and Yu, Ida Bjørkum divides the evolution of China's climate change policy into three stages: 1) 1988–1992, when climate change entered China's political agenda; 2) 1992–1997, from the UNCED to Kyoto Protocol; 3) 1997–present (2004), post-Kyoto positions. In this report, the author applies three explanatory models as guidelines to identify the explanatory factors: the unitary rational actor model, the domestic politics model, and the social learning and ideas model. These three models are used to establish a set of hypotheses on factors influencing China's climate change policymaking.³⁵ In the latter, the author applies the "advocacy coalition framework" to explain China's climate policy change. In this report, the evolution of China's climate change policy is divided into three phases: 1988–1997 (when global warming was a developed-country issue while economic development was

China's Environmental Diplomacy), *世界经济与政治* (*Shijie Jingji yu Zhengzhi; World Economic and Politics*), Iss. 11, 1998, pp. 12–15. See also: Zhang Haibin, 论中国环境外交的实践及其作用 (*Lun Zhongguo Huanjing Waijiao de Shijian Jiqi Zuoyong; The Practice and Effect of China's Environmental Diplomacy*), *世界经济与政治论坛* (*Shijie Jingji yu Zhengzhi Luntan; Forum of World Economics and Politics*), Iss. 3, 1998, pp. 38–44.

34 Paul Harris and Hongyuan Yu, Environmental Change and the Asia Pacific: China Responds to Global Warming, *Global Change, Peace and Security*, Vol. 17, No. 1, February 2005, pp. 45–58.

35 Ida Bjørkum, China in the international politics of climate change: a foreign policy analysis, *FNI report 12/2005*, pp. 26–32.

a Chinese issue), 1998–2006 (when climate change transferred from a global issue to a more national concern), 2007–2011 (when climate change is elevated to a national priority).³⁶

More discussions on China's climate change policy can be found in the following literature: Zhang Haibin, *China and International Climate Change Negotiations*, March 2013, WeltTrends Online-Dossier, http://welttrends.de/res/uploads/Zhang_China-and-International-climate-change-negotiations.pdf; Wei Liang, *Changing Climate? China's New Interest in Global Climate Change Negotiations*, in Joel Jay Kassiola and Su Jian Guo (eds.), *China's Environmental Crisis Domestic And Global Political Impacts And Responses*, Palgrave Macmillan, 2010, pp. 61-84; Paul Harris, *Peace, Security and Global Climate Change: The Vital Role of China*, *Global Change, Peace & Security*, Vol. 23, Iss. 2, 2011, pp. 141–145; Gørild Heggelund, *China's Climate Change Policy: Domestic and International Developments*, *Asian Perspective*, Vol. 31, No. 2, 2007, pp. 155–191.

In addition to the analysis on the evolution of China's climate change policy, scholars also noticed China's "cautious" or "paradoxical" stance in climate change negotiations. For example, in "The Apparent 'Paradox' in China's Climate Policies," the author notices that "China's climate-relevant policies appear somehow paradoxical. On the one hand, the country has steadfastly refused to commit to any internationally binding emissions reduction target ... On the other hand, China has invested enormously and made great strides in renewable energy."³⁷ Explaining China's stance, the author argues that,

*The seemingly paradoxical climate-relevant policies in China are not contradictory. The scarcity of internationally binding commitments there stems from Beijing's priority for growth and concerns for national sovereignty and equity. Whereas the push for renewable energy is primarily a policy to promote strategic growth industries, it is also meant to address China's energy security concerns, which could potentially derail its growth prospects, if unaddressed.*³⁸

³⁶ Iselin Stensdal, *China's Climate-Change Policy 1988–2011: From Zero to Hero?*, *FNI Report 9/2012*.

³⁷ Lynette Ong, *The Apparent "Paradox" in China's Climate Policies*, *Asian Survey*, Vol. 52, No. 6, 2012, p. 1139.

³⁸ *Ibid.* pp. 1158–1159.

Other works that contain analyses on China's cautious or paradoxical stance in climate change politics include: Stephen Junor, China's Climate Change Paradox, *The Diplomat*, September 2014, See: <http://thediplomat.com/2014/09/chinas-climate-change-paradox/>; Imme Scholz, Climate Change: China and India as Contributors to Problems and Solutions, in Hubert Schmitz and Dirk Messner (eds.) *Poor and Powerful—The Rise of China and India and its Implications for Europe*, Bonn: Deutsches Institut für Entwicklungspolitik, 2008, pp. 40–54; Phillip Stalley, Forum: Principled Strategy: The Role of Equity Norms in China's Climate Change Diplomacy, *Global Environmental Politics*, Vol. 13, No. 1, 2013, pp. 1–8.

3. Institutions in EU-China Environmental Cooperation

EU-China cooperation in environment did not attract much academic attention until the last few years. Thus, the volume of the literature on this theme is still small. Briefly, the literature with regard to the EU-China environmental cooperation can be clarified into three groups.

The first group of literature is represented by “Environmental Issues as a ‘Strategic’ Key in EU-China Relations” by David Scott, and emphasizes the significance of environment in the EU-China relations, In this article, the author examines the context of EU-China environmental cooperation, their partnership on climate change, clean development institution, and the issue of environmental technology transfer. He argues that “the innate long-term importance of environmental issues gives a weighty imperative for the future, with environmental cooperation being a particularly useful key for strengthening EU–China relations.”³⁹ The second group emphasizes specific environmental issues, such as two studies on climate change in the EU-China relations—“The Potentials and Limits of China-EU Cooperation on Climate Change and Energy Security” by Constantin Holzer and Zhang Haibin, and “Climate Change and EU-China Partnership: Realist Disguise or Institutional Blessing?” by Men Jing.

The third group of literature focuses on EU-China environmental cooperation from an

39 David Scott, Environmental issues as a ‘strategic’ key in EU-China relations, *Asia Europe Journal*, Vol. 7, Iss. 2, 2009, p. 222.

(bilaterally and multilaterally) institutional perspective. These studies are mainly contributed by Pietro De Matteis. The first work by Pietro is “EU-China Cooperation in the Field of Energy, Environment and Climate Change,” in which, the author discusses the role of energy, environment, and climate change in the EU-China relations and the potential competition between two sides. Pietro contends that by focusing on the topics of energy, environment, and climate change, the EU-China cooperation has been elevated to a new level. In this paper, in addition to the discussion on EU-China cooperation in the three fields, the EU-China institutional framework on climate change outlined by the author will be particularly learned.⁴⁰ The second work by Pietro is “The EU’s and China’s Institutional Diplomacy in the Field of Climate Change”—an occasional paper that the author drafted for the European Union Institute for Security Studies (Paris) in 2012. In this paper, the author discusses the EU and China’s roles in shaping the climate regime and explores the ways that the two sides benefit from the regime. I share different focus with Pietro, as my study highlights the bilateral cooperation rather than multilateral cooperation, but the value of this paper to my study is still substantial.

4. The EU-China Energy Cooperation: An Institutional Analysis

The writing of the EU-China energy cooperation will be reliant on original sources, as the number of academic works in this field is small. This is particular true when discussing the roles of energy in the Asia-Europe Meeting (ASEM), the ECAS and several sectoral institutions. Among the small volume of academic works, “EU-China Cooperation in the Field of Energy, Environment and Climate Change” by Piedro De Matteis, which has been introduced above is worth of being learned. In this paper, the words that the author spent discussing the EU-China energy cooperation would be very beneficial to the study.⁴¹

40 Pietro De Matteis, *EU-China Cooperation in the Field of Energy, Environment and Climate Change*, *Journal of Contemporary European Research*, Vol. 6, No. 4, 2010, pp. 449–477.

41 *Ibid.*

In addition to Pietro, Zha Daojiong from Peking University is also one of the main contributors to this literature. Two works by Zha are of particular value being introduced. The first one is “Energy Security in China-EU Relations: Framing Further Efforts of Collaboration,” published in 2013. In this report, Zha raises some arguments on the EU and China’s energy security concepts and policies, the features and rationales of the EU-China energy cooperation. For example, Zha argues that two basic features can be recognized in EU-China energy cooperation, 1) trade in energy commodities between China and the EU is small in scale; 2) energy development, i.e. European participation in the downstream sector of the energy economy in China, has been the primary feature of European interactions with China over energy.⁴² The other study by Zha is “China-EU Energy Governance: What Lessons to be Drawn?” coauthored with Lai Suet Yi, and edited in “Challenges of European External Energy Governance with Emerging Powers.” In this book chapter, the authors discuss China’s energy policy and the evolution of EU-China energy interaction. What particularly interest me are the opinions raised by the Chinese and European interviewees on the EU-China energy dialogue in the chapter.⁴³ It would be very useful for my discussion on the role of the institutions in EU-China energy cooperation.

Another important piece of work that will be learned is China-EU Energy Cooperation Roadmap 2020 (Concept Note), elaborated by the Europe-China Clean Energy Centre (EC2) and jointly drafted by Chinese and European experts in March 2015. In this document, the background, a historical review, and an analysis on the challenges of EU-China energy cooperation are provided. The discussion on the background of EU-China energy cooperation given in this document will be learned by this study and enriched. Also, the institutional framework outlined in this document (the EU-China High-level Energy Meeting, the EU-China Energy Dialogue, and the Partnership on Urbanization)⁴⁴ will be learned, but will be revised and expanded.

Other works in this field might include: Constantin Holzer and Zhang Haibin, The

42 Zha Daojiong, Energy Security in China-EU Relations: Framing Further Efforts of Collaboration, in Jakub Godzimirski (ed.), *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses*, Palgrave Macmillan, 2016, pp. 113–133.

43 Zha Daojiong and Lai Suet Yi, China-EU Energy Governance: What Lessons to be Drawn? in Michèle Knodt, Nadine Piefer and Franziska Müller (eds.), *Challenges of European External Energy Governance with Emerging Powers*, Ashgate Publishing, 2015, p. 136.

44 EC2, China-EU Energy Cooperation Roadmap 2020 (Concept Note), March 2015, See: http://documents.rec.org/publications/EC2_roadmap_2020_EN_web.pdf.

Potentials and Limits of China-EU Cooperation on Climate Change and Energy Security, *Asia Europe Journal*, Vol. 6, Iss. 2, 2008, pp. 217–227; European Commission-Energy-International Cooperation-China, See: <https://ec.europa.eu/energy/en/topics/international-cooperation/china>; Coraline Goron, Low Carbon Policies and the Management of EU-China Trade Relations, Paper submitted for the Second Workshop on EU-China Relations in Global Politics, “Strategic Partnership, EU-China Relations under the New Leadership,” 4–3 March 2013, Renmin University, Beijing, China; Maria Kottari and Virginia Marantidou, The Sino-European Nexus in Global Energy Governance, *EU-China Observer*, Issue #3.16.

The above discussion reveals the state of art of the study on the EU’s environmental policy and global leadership, China’s environmental policy and diplomacy, and EU-China environmental cooperation. Although with some achievements, three shortcomings still exist.

First, the discussion on the roles and limits of institutions in EU-China environmental cooperation is insufficient. As demonstrated above, the volume of the literature on the EU-China environmental cooperation is very small, while the discussion on specific institutions in their environmental cooperation is less. More gravely, these existing works face some constrains. For example, although the “EU-China Cooperation in the Field of Energy, Environment and Climate Change” is very valuable to my study, it lacks a discussion on the evolution of EU-China environmental cooperation, a systemic analysis on the roles and limits of institutions in the EU-China environmental cooperation. And these are what my study aims to contribute to the literature.

Second, the authors largely neglect the critiques against institutionalism, which leads to their studies one-sided. The IR researchers generally agree that institutionalism is a suitable theory for environment studies, but this theory is not without critiques. Therefore, although discussing from an institutionalist point of view, these works lack a critical analysis on the relations between theory and practice in EU-China environmental cooperation. And this is also what my study aims to contribute.

Third, the new developments in the EU’s environmental policy and global leadership, and China’s environmental policy and diplomacy are to be developed in my study. For

example, in the case of China's environmental policy, the new developments since Xi Jinping took power in 2013 are of particular interest to the study. Also, on the EU and China's engagement with climate change negotiations, their performance in 2015 Paris Conference is worth of observation and analysis to better understand the evolution of their roles in global climate change politics. And this is also one task that my study is about to take.

Chapter II. Theoretical Framework

Theory is vital for a study in a field like IR. Although, this study focuses on EU-China environmental cooperation and mainly bases itself on policy analysis and empirical research, a theoretical framework is never less needed. The role of theory is two-fold: 1) it can be applied to guide the study and assist in achieving the research targets, 2) the research can be applied to verify the arguments of theory and help find out the potential limits of the theory. The main melody of this study—as indicated by the title—is the “institutional” perspective of EU and China environmental “cooperation.” Therefore, I apply “cooperation” and “institution” as the two key words to construct the theoretical framework. In the following sections, I first discuss the core arguments of the three mainstream IR theories: neorealism, neoliberalism and constructivism. In the second section, I discuss cooperation and its theoretical studies in neorealism and constructivism. The third section is the discussion on cooperation and institutions in neoliberalism, and their critiques. In section four, I select neoliberalism as the theoretical framework and explain the reasons of doing so.

1. Neorealism, Neoliberalism and Constructivism in IR

1.1 Neorealism

The realism thinking can be traced back to the intellectual thinkers such as Thucydides, Machiavelli, and Thomas Hobbes. Although had dominated the IR thought in the seventeenth and eighteenth centuries, the political realism was pushed aside by idealists (such as Woodrow Wilson) during the short era between the two world wars. The fire of the Second World War burned the peace illusion made up by idealists. After the war, realism soon reoccupied the position of the most popular theory in the IR academy.¹ The IR realism emphasizes “the constraints on politics imposed by human nature and the absence of international government” and “the political necessities that flow from

¹ David Baldwin, Neoliberalism, Neorealism, and World Politics, in David Baldwin (ed.), *Neorealism and neoliberalism: the contemporary debate*, Columbia University Press, 1993, pp. 11–12.

international anarchy.”² In the last decades, an intensive literature on realism had been produced by IR researchers, and in this vast literature of realism (both traditional realism and neorealism), the “Politics among Nations: The Struggle for Power and Peace” by Hans Morgenthau and “Theory of International Politics” by Kenneth Waltz, “stand out above the rest” and “have few serious competitors.”³

Morgenthau’s “Politics among Nations: The Struggle for Power and Peace” is a book that none IR student can ignore. In this founding work of realism realm, Morgenthau elaborates the well-known six principles of political realism. He argues that 1) politics “is governed by objective laws that have their roots in human nature;” 2) to realists, the concept of interest is defined in terms of power; 3) “the key concept of interest defined as power is an objective category which is universally valid, but it does not endow that concept with a meaning that is fixed once and for all;” 4) “political realism is aware of the moral significance of political action,” but it “maintains that universal moral principles cannot be applied to the actions of states in their abstract universal formulation, but that they must be filtered through the concrete circumstances;” 5) “political realism refuses to identify the moral aspirations of a particular nation with the moral laws that govern the universe;” 6) “intellectually, the political realist maintains the autonomy of the political sphere.”⁴

Although had already been systematically elaborated by Morgenthau, IR students did not cease putting forward their arguments on the core assumptions of political realism. For example, Kenneth Waltz, a leading scholar of realist theory and the founder of neorealist theory, identifies four elements in *Realpolitik*:

The ruler’s, and later the state’s, interest provides the spring of action; the necessities of policy arise from the unregulated competition of states; calculation based on these necessities can discover the policies that will best serve a state’s interests; success is the ultimate test of policy, and success is

2 Jack Donnelly, *Realism and international relations*, Cambridge University Press, 2000, pp. 9–10.

3 John Mearsheimer, Realism, the real world, and the academy, in Michael Brecher and Frank Harvey (eds.) *Realism and Institutionalism in International Studies*, Ann Arbor: University of Michigan Press, 2002, p. 23.

4 Hans Morgenthau, Revised by Kenneth W. Thompson, *Politics Among Nations: The Struggle for Power and Peace*, The McGraw-Hill Companies, Inc. 1985, pp. 4–13.

*defined as preserving and strengthening the state.*⁵

In “Anarchy and the Limits of Cooperation: a Realist Critique of the Newest Liberal Institutionalism,” which is listed by David Baldwin as one of the three particularly important works by neorealists during the 1970s and 1980s (together with Kenneth Waltz’s “Theory of International Relations” in 1975 and “Theory of International Politics” in 1979), Joseph Grieco discusses the five propositions of realism. He summarizes that, for realists:

*First, states are the major actors in world affairs. Second, the international environment severely penalizes states if they fail to protect their vital interests or if they pursue objectives beyond their means; hence, states are “sensitive to costs” and behave as unitary-rational agents. Third, international anarchy is the principal force shaping the motives and actions of states. Fourth, states in anarchy are preoccupied with power and security, are predisposed towards conflict and competition, and often fail to cooperate even in the face of common interests. Finally, international institutions affect the prospects for cooperation only marginally.*⁶

After being raised by Waltz in “Theories of International Relations,” neorealism soon attracted a number of followers who nurtured its further development. Waltz emphasizes the role of structure in international politics, therefore, his theory is also named as “Structural Realism.” Waltz argues that “a system is composed of a structure and of interacting units. The structure is the system-wide component that makes it possible to think of the system as a whole.”⁷ He defines “structure” from three perspectives: the principle by which a system is ordered, the specification of functions of differentiated units, and the distribution of capabilities across units.⁸ The core concepts and arguments of neorealism are based on the traditional realism thought. It is “both a critique of traditional realism and a substantial intellectual extension of a theoretical tradition which was in danger of being outflanked by rapid changes in the

5 Kenneth Waltz, *Theory of International Politics*, Addison-Wesley Publishing Company, Inc. 1979, p. 117.

6 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, p. 488.

7 Kenneth Waltz, *Theory of International Politics*, Addison-Wesley Publishing Company, Inc. 1979, p. 79.

8 *Ibid.* pp. 100–101.

contours of global politics.”⁹ However, they do differentiate from one another on some issues. According to John Mearsheimer, the fundamental difference between traditional realism and neorealism is reflected in their answers to the question: “Why do states want power?” When the answer of traditional realists is “human nature,” the neorealists take “structure” as theirs.¹⁰ A brief review of the distinctions between traditional realism and neorealism can help readers better understand the neorealism.

On the amendments that the neorealism makes to traditional realism, Stanley Hoffmann, in a conversation with Ni Shixiong (who is a professor of Fudan University) summarizes that: 1) the traditional realism focuses on state, and emphasizes that the world is in anarchy; the neorealism focuses on structure, and believes that the interdependence of international politics and economy exists in the world; 2) the traditional realism pays more attention to the study of national interests and power, while the neorealism lays emphasis on the study of the distribution of power and the analysis of structure; 3) the traditional realism underlines the international confliction rather than the possibility of international cooperation, and neglects the role of international regimes in promoting cooperation; the neorealism holds the opinion that the international confliction and international cooperation both exist, and highlights the possibility of international cooperation and the role of international regimes in promoting cooperation.¹¹

Kenneth Waltz also attempted to explore the distinctions between traditional realism and neorealism. In his paper—“Realist Thought and Neorealist Theory,” he summarizes four major points that differentiate the neorealism thought from the traditional realism. He argues that neorealism looks the international politics as a system with a precisely defined structure, and this is its fundamental departure from traditional realism. The second distinction is about the causal directions. The traditional realists, as Waltz argues, believe that the causes run in one direction and infer outcomes from the salient attributes of the actors producing them. On the contrary, the neorealists insist that the international politics can be understood only if the effects of structure are added to

9 Scott Burchill et al., *Theory of International Relations (Second Edition)*, PALGRAVE, 2001, p. 88.

10 John Mearsheimer, Structural realism, in Tim Dunne, Milja Kurki and Steve Smith (eds.), *International Relations Theories: Discipline and Diversity*, Oxford University Press, 2007, p. 72.

11 Ni Shixiong et al., *当代西方国际关系理论 (Dangdai Xifang Guoji Guanxi Lilun; Contemporary Western Theories of International Relations)*, 复旦大学出版社 (Fudan Daxue Chubanshe; Fudan University Press), Shanghai, 2001, pp. 123–124.

traditional realism's unit-level explanations. They believe that the causes run in two directions, and these causes locate not only at the level of interacting units, but also the level of structure. The third distinction concerns the view on power. The traditional realists argue that the desire to attain a maximum power is universal and roots in human nature, and states will strive to accumulate more and more power. However, the neorealists see power as a possibly useful means, and states try to keep a proper power—not too little, neither too much. Also, while the traditional realists define power more as the military power, the neorealists view power as the combined capability of a state. The fourth distinction is about the view on interacting units. For the traditional realists, anarchy is an unstated natural precondition of international politics. Therefore, they put their emphasis on the interacting units. However, for the neorealists, anarchy is a distinct structure and their attention is paid to the impact that structure produces to interacting units. Also importantly, the traditional realists concentrate on the heterogeneity of states, and believe that differences of behavior and outcomes proceed directly from differences in the composition of units, while the neorealists try to explain how the structure affects behavior and outcomes.¹²

Although these distinctions exist, the neorealism shares a number of common arguments with traditional realism. Therefore, neorealism should be viewed as a development of traditional realism, rather than a revolution. I apply the term “neorealism” in this study, but readers should be aware of the strong link between the traditional realism and the neorealism.

1.2 Neoliberalism

The emergence of neoliberalism thinking in IR is a consequence of the critiques against the neorealism. Two of the most acknowledged scholars of IR neoliberalism are Robert Keohane and Joseph Nye. As early as 1972, Keohane and Nye published the “Transnational Relations and World Politics,” and five years later they published another significant work of neoliberalism—“Power and Interdependence: World Politics in Transition” and further elaborated their theory.

In 1979, Waltz presented his neorealist theory, and soon incurred critiques. Some IR

12 Kenneth Waltz, Realist thought and neorealist theory, *Journal of International Affairs*, Vol. 44 Iss. 1, 1990, pp. 21–37.

researchers criticized and challenged the arguments of neorealism from various perspectives and gradually formed their own camp. However, they did not summarize and name their arguments let alone making it a theory. In 1988, Nye published “Neorealism and Neoliberalism” which marked the coming into existence of the IR “neoliberal theory.” It should be noted that the IR neoliberal theory is not a single theory without branches. Actually, some other liberalism theories exist such as commercial liberalism, democratic liberalism, regulatory liberalism, and sociological liberalism.¹³ Among them, the neoliberal institutionalism is the one that has been best developed and with “the most powerful challenge to neorealism.”¹⁴ Thus, the term “neoliberalism” usually refers to “neoliberal institutionalism.” The neoliberals’ main critique towards neorealism is that “realism overemphasizes conflict and underestimates the capacities of international institutions to promote cooperation.”¹⁵ They argue that “even if the realists are correct in believing that anarchy constrains the willingness of states to cooperate, states nevertheless can work together and can do so especially with the assistance of international institution.”¹⁶

The neoliberals and neorealists both believe that their theory holds a more powerful explanatory and debate with each other on multiple theoretical battle fields. In 1993, the “Neorealism and Neoliberalism: the Contemporary Debate” edited by David Baldwin was published. This book is regarded as the most systematical and comprehensive summarization of the neorealist-neoliberal debate. In this book, Baldwin identifies six points to discuss the distinctions between neorealism and neoliberalism.¹⁷

1) The nature and consequences of anarchy

The neoliberals and neorealists all agree that anarchy exists in world politics. However, they diverge on its nature and consequences. Generally speaking “neorealists see anarchy as placing more severe constraints on state behavior than do neoliberals.”¹⁸

2) International cooperation

13 Joseph Nye, Neorealism and neoliberalism, *World Politics*, Vol. 40, No. 2, 1988, pp. 235–251.

14 David Baldwin, Neoliberalism, Neorealism, and World Politics, in David Baldwin (ed.), *Neorealism and neoliberalism: the contemporary debate*, Columbia University Press, 1993, p. 4.

15 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, p. 486.

16 *Ibid.* p. 486.

17 David Baldwin, Neoliberalism, Neorealism, and World Politics, in David Baldwin (ed.), *Neorealism and neoliberalism: the contemporary debate*, Columbia University Press, 1993, pp. 4–8.

18 *Ibid.* p. 5.

The neoliberals and neorealists all agree that international cooperation is possible, however they hold different opinions on the likelihood of its occurrence. Generally, neoliberals are more optimistic to international cooperation, while the neorealists are more conservative and believe that international cooperation is difficult to be achieved and maintained.

3) Relative gains and absolute gains

Although it is not objective to say that each one of the theories only focuses on relative gains or absolute gains, as introduced by Baldwin, the neoliberals incline to absolute gains while the neorealists believe that states concern more on relative gains.

4) Priority of state goals

The neoliberals and neorealists diverge on the emphasis of national security and economic welfare. The neoliberals usually emphasize the efforts of states to maximize their economic welfare, while the neorealists believe that states are preoccupied with security and survival.

5) Intentions and capabilities

The neorealists underline capabilities more than intentions. They argue that the future intentions of states are uncertain, and this leads to the states to pay attention to capabilities, which is “the ultimate basis for their security and independence.”¹⁹ However, the neoliberals insist that more attention should be paid to incentives, because the “capabilities count only insofar as they affect the preferences and intentions of states.”²⁰

6) Institutions and regimes

The neoliberals and neorealists all realize the rise of international regimes and institutions. However, they hold different opinions on the significance of institutions and regimes. The neoliberals welcome the international institutions and regimes to play a role in world politics, and believe that it is a useful method to mitigate anarchy, while the neorealists doubt this.²¹

19 *Ibid.* p. 7. See: Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, p. 498.

20 *Ibid.* p. 8.

21 David Baldwin, Neoliberalism, Neorealism, and World Politics, in David Baldwin (ed.), *Neorealism*

In addition to the attempt by Baldwin, Joseph Grieco also took efforts to summarize the major distinctions between neorealism and neoliberalism. He observed that the neoliberals “rejected realism’s proposition about the centrality of state,”²² and “attacked the realist view that states are unitary or rational agents.”²³ They also “argued that states were becoming less concerned about power and security”²⁴ and “rejected realism’s pessimism about international institution.”²⁵ However, he also witnessed some revisions by neoliberals as they have accepted “realist arguments that states are the major actors in world affairs and are unitary-rational agents” and “realism’s emphasis on anarchy to explain state motives and actions.”²⁶

1.3 Constructivism

Born in the late 1980s and early 1990s, constructivism is definitely a young member of IR theory family. However, its impact to the IR academy should never be underestimated. Now, it is already one of the mainstream IR theories, and is playing the role as a challenger to neorealism and neoliberalism. During the rise of constructivism, Alexander Wendt is one of the most critical contributors. In 1992, Wendt published his landmark article “Anarchy is What States Make of It,” challenged the hypothesis of anarchy shared by neorealism and neoliberalism. In 1999, he further published “The Social Theory of International Politics” and systematically elaborated his IR constructivism.

The IR constructivism learns some concepts from sociology, such as identity, norm, knowledge, and culture. Among these concepts, constructivists particularly emphasize “identity,” as “identities are the basis of interests.”²⁷ Two basic tenets are insisted by constructivists, 1) “the structures of human association are determined primarily by shared ideas rather than material forces;” 2) “the identities and interests of purposive actors are constructed by these shared ideas rather than given by nature.”²⁸ Wendt

and neoliberalism: the contemporary debate, Columbia University Press, 1993, pp. 4–8.

22 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, p. 488.

23 *Ibid.* p. 489.

24 *Ibid.* p. 489.

25 *Ibid.* p. 490.

26 *Ibid.* p. 492.

27 Alexander Wendt, Anarchy is what states make of it: the social construction of power politics, *International Organization*, Vol. 46, No. 2, 1992, p. 398.

28 Alexander Wendt, *Social theory of international politics*, Cambridge University Press, 1999, p. 1. In

recognizes three cultures of international politics: Hobbesian, Lockean, and Kantian, and argues that they are based on the respective roles of enemy, rival, and friend. As summarized by Ni Shixiong, there are three core arguments in Wendt's constructivism. First, there are both social structure and material structure in world politics. The social structure refers to the cultural content of the behaviors of actors, such as belief, norm, idea, and cognition that form the basic feature and occupy the dominant position of a society. The constructivists need to understand the interests and behavior of states by analyzing the social implication and value structure, rather than the power structure. Second, the constructivists emphasize the role of identity, and believe that it is the identity that constructs interests and behaviors of states. Therefore, to understand the interests and behaviors of states, the analysis of social structure that influences the identity of IR actors is required. Three, the constructivists argue that an inter-relationship exists between units and structures of international politics. They believe that the social structure does not only determine the implication and identity of individual actor, but also the patterns of the economic, political, and cultural activities of actors. Also, from a constructivist point of view, the social structure is the consequence of the practice of actors.²⁹

Constructivism contributes considerably to the development of IR theories by offering "alternative understandings of a number of the central themes in international relations theory."³⁰ It basically "provides the answers to all our IR problems."³¹ However, a simple fact is that, as confessed by Wendt himself, "constructivism is not a theory of

Anarchy is what states make of it: The social construction of power politics, Wendt elaborated the two principles of constructivism: 1) people act toward objects, including other actors, on the basis of the meanings that the objects have for them; 2) the meanings in terms of which action is organized arise out of interaction.

29 Ni Shixiong et al., *当代西方国际关系理论 (Dangdai Xifang Guoji Guanxi Lilun; Contemporary Western Theories of International Relations)*, 复旦大学出版社 (Fudan Daxue Chubanshe; Fudan University Press), Shanghai, 2001, pp. 224–225. As more briefly summarized by Dale Copeland, three elements help differentiate constructivism from other IR theories: 1) "global politics is said to be guided by the intersubjectively shared ideas, norms, and values held by actors;" 2) "the ideational structure has a constitutive and not just regulative effect on actors;" 3) "ideational structures and actors ('agents') co-constitute and co-determine each other." See: Dale Copeland, The constructive challenge to structural realism: a review essay, in Stefano Guzzini and Anna Leander (eds.), *Constructivism and International Relations: Alexander Wendt and his critics*, Routledge, 2006, p. 3.

30 Ted Hopf, The promise of constructivism in international relations theory, *International Security*, Vol. 23, No. 1, 1998, p. 172.

31 Cynthia Weber, *International Relations Theory: A Critical Introduction*, Routledge, Abington, Oxon, UK, 2010, p. 62.

international politics,”³² but an “approach to the international system.”³³ As commented by Emanuel Adler, constructivism “is a social theory on which constructivist theories of international politics are based,”³⁴ “a set of paradigmatic lenses through which we observe all socially constructed reality, ‘good’ and ‘bad’.”³⁵ It “challenges only the ontological and epistemological foundations of realism and liberalism.”³⁶ Ronen Palan’s critique is more straightforward. He contends that constructivism “has not only has done a disservice to IR theory, but also to the great potential for constructivist thought in IR.”³⁷ In addition, the application of constructivism in the IR studies, as analyzed by Ted Hopf, faces serious obstacles, both theoretically and practically.³⁸

2. Cooperation in Neorealism and Constructivism

Cooperation is a rather common phenomenon observed between animals, human beings, and also states. Cooperation as a research theme for social scientists is not new, but it did not attract much attention from IR researchers until the 1970s. As complained by Robert Keohane at the beginning of one of his most influential books—“*After Hegemony: Cooperation and Discord in the World Political Economy*,” “in the study of politics, perhaps nothing seems so dismal as writing about international cooperation.”³⁹

32 Alexander Wendt, *Social theory of international politics*, Cambridge University Press, 1999, p. 7. See also Emanuel Adler, Seizing the middle ground: constructivism in world politics, *European Journal of International Relations*, Vol. 3, Iss. 3, 1997, pp. 319–363; Ted Hopf, The promise of constructivism in international relations theory, *International Security*, Vol. 23, No. 1, 1998, pp. 171–200; Jennifer Sterling-Folker, Competing paradigms or birds of a feather? Constructivism and neoliberal institutionalism compared, *International Studies Quarterly*, Vol. 44, No. 1, 2000, pp. 97–119; Ole Holsti, Theories of International Relations, in Michael Hogan and Thomas Paterson (eds.), *Explaining the History of American Foreign Relations*, Cambridge University Press, 2004, pp. 51–90.

33 Alexander Wendt, *Social theory of international politics*, Cambridge University Press, 1999, p. 32.

34 Emanuel Adler, Seizing the middle ground: constructivism in world politics, *European Journal of International Relations*, Vol. 3, Iss. 3, 1997, p. 323.

35 *Ibid.* p. 336.

36 *Ibid.* p. 323.

37 Ronen Palan, A world of their making: an evaluation of the constructivist critique in international relations, *Review of International Studies*, Vol. 26, No. 4, 2000, pp. 575–598.

38 Ted Hopf, The promise of constructivism in international relations theory, *International Security*, Vol. 23, No. 1, 1998, pp. 171–200. For a more detailed theoretical critique against constructivism, readers are suggested to refer to: Stefano Guzzini and Anna Leander (eds.), *Constructivism and International Relations: Alexander Wendt and his critics*, Routledge, 2006.

39 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton

It is “elusive enough, and its source are sufficiently multifaceted and intertwined, that it constitutes a difficult subject to study.”⁴⁰ Perhaps partly due to the elusiveness of cooperation, a vast literature had been generated in the IR academia. The literature on cooperation is now so large that Robert Axelrod believes that “the authors can be forgiven for not being fully cognizant of all work related to their own research topics.”⁴¹ In this section, it would be impossible and unnecessary to discuss all the perspectives of cooperation study in IR. Instead, I would follow the recognition of the three approaches of conventional IR theory wisdom developed above to grasp the main clues of this literature.

Cooperation, according to Keohane, occurs “when actors adjust their behavior to the actual or anticipated preferences of others, through a process of policy coordination.”⁴² This definition contains at least two elements, 1) “it assumes that each actor’s behavior is directed toward some goal(s);” 2) it “implies that cooperation provides the actors with gains or rewards.”⁴³ Two concepts must be clarified from “cooperation.” The first one is “harmony.” According to Keohane, harmony is “a situation in which actors’ policies (pursued in their own self-interest without regard for others) automatically facilitate the attainment of others’ goals.”⁴⁴ Harmony “requires complete identity of interests, but cooperation can only take place in situations that contain a mixture of conflicting and complementary interests.”⁴⁵ “Where harmony reigns, cooperation is unnecessary.”⁴⁶ Contrary to cooperation, “discord” “often leads to efforts to induce others to change their policies,”⁴⁷ and thus conflict. Cooperation, as stated by Keohane, “should not be viewed as the absence of conflict, but rather as a reaction to conflict or potential conflict.”⁴⁸ He concludes that “without the specter of conflict, there is no need to

University Press, 2005, p. 5.

40 *Ibid.* p. 10.

41 Robert Axelrod, On six advances in cooperation theory, *Analyse & Kritik*, Vol. 22, Iss. 1, 2000, p. 131.

42 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton University Press, 2005, p. 51.

43 Helen Milner, International theories of cooperation among nations: strengths and weaknesses, *World Politics*, Vol. 44, Iss. 3, 1992, p. 468.

44 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton University Press, 2005, p. 51.

45 Robert Axelrod and Robert Keohane, Achieving cooperation under anarchy: Strategies and institutions, *World Politics*, Vol. 38, Iss. 1, 1985, p. 226.

46 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton University Press, 2005, p. 51.

47 *Ibid.* p. 52.

48 *Ibid.* p. 54.

cooperate.”⁴⁹

According to Robert Axelrod, cooperation theory needs to answer three central theoretical questions: 1) under what conditions can cooperation emerge and be sustained among actors who are egoists? 2) what advice can be offered to a player in a given setting about the best strategy to use? and 3) what advice can be offered to reformers who want to alter the very terms of the interaction so as to promote the emergence of cooperation?⁵⁰ Waltz believes that in international politics area, “the central question of cooperation was initially defined as why states, existing in an atomistic, anarchic, ‘Hobbesian’ international system (characterized by a ‘war of all against all’) would cooperate with each other in the first place.”⁵¹ Cooperation can be achieved in more than one way. It can be tacit (which means without communication or explicit agreement) or be achieved by negotiation in an explicit bargaining process. Besides, it can also be imposed by the strong party.⁵² Alexford has proven that cooperation can occur even among pure egoists. To make cooperation happen among egoists, the strategy of reciprocity (or Tit-for-Tat) must be applied.⁵³ Reciprocity, as defined by Keohane, means “exchanges of roughly equivalent values in which the actions of each party are contingent on the prior actions of the others in such a way that good is returned for good, and bad for bad.”⁵⁴ It “seems to be the most effective strategy”⁵⁵ to foster and maintain cooperation.

2.1 The Neorealist View of International Cooperation

Neorealist theory is generally pessimistic to cooperation between international units.⁵⁶

49 *Ibid.*

50 Robert Axelrod, On six advances in cooperation theory, *Analyse & Kritik*, Vol. 22, Iss. 1, 2000, pp. 130–151.

51 Kate O’Neill, Jorg Balsiger and Stacy VanDeveer, Actors, norms, and impact: recent international cooperation theory and the influence of the agent-structure debate, *Annual Review of Political Science*, Vol. 7, 2004, pp. 149–175.

52 Helen Milner, International theories of cooperation among nations: strengths and weaknesses, *World Politics*, Vol. 44, Iss. 3, 1992, pp. 466–496.

53 Robert Axelrod, *The Evolution of Cooperation*, New York: Basic Books, 1984; Robert Axelrod and Robert Keohane, Achieving cooperation under anarchy: Strategies and institutions, *World Politics*, Vol. 38, Iss. 1, 1985, pp. 226–254.

54 Robert Keohane, Reciprocity in international relations, *International Organization*, Vol. 40, No. 1, 1986, p. 8.

55 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton University Press, 2005, p. 214.

56 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, pp. 485–507.

The pessimism of neorealists on cooperation originates from their definition of anarchy. Anarchy, as Baldwin contends, “is one of the most slippery terms in political discourse.”⁵⁷ According to Mearsheimer, anarchy “is an ordering principle; it simply means that there is no centralized authority or ultimate arbiter that stands above states.”⁵⁸ Robert Keohane argues that anarchy “refers to a lack of common government in world politics, not to a denial that an international society—albeit a fragmented one—exists.”⁵⁹ Grieco agrees with Keohane that “anarchy means the absence of a common interstate government,” however, he takes a further step forward and reminds neoliberals that a deeper meaning of anarchy for neorealists is that “there is no overarching authority to prevent others from using violence, or the threat of violence, to destroy or enslave them.”⁶⁰ In such an anarchic world, self-help is the principle of action. It means that states “have to rely on themselves to ensure their survival.”⁶¹

Although the neorealists admit that cooperation is possible under anarchy, they insist that cooperation is “harder to achieve, more difficult to maintain, and more dependent on state power” than their neoliberal counterparts think.⁶² The reasons of this difficulty, according to Waltz include “the division of possible gains that may favor others more than itself” which is actually the relative-gain problem, and the risk of too much dependence on others “through cooperative endeavors and exchanges of goods and services.”⁶³ Grieco agrees with Waltz on the first barrier of cooperation (the relative-gain problem), but he claims that the other obstacle for actors to cooperate is “cheating.”⁶⁴ In the debate between the neorealists and neoliberals on international cooperation, the relative-gain problem is at the center.

57 David Baldwin, Neoliberalism, Neorealism, and World Politics, in David Baldwin (ed.), *Neorealism and neoliberalism: the contemporary debate*, Columbia University Press, 1993, p. 14

58 John Mearsheimer, Structural realism, in Tim Dunne, Milja Kurki and Steve Smith (eds.), *International Relations Theories: Discipline and Diversity*, Oxford University Press, 2007, p. 73.

59 Robert Axelrod and Robert Keohane, Achieving cooperation under anarchy: Strategies and institutions, *World Politics*, Vol. 38, Iss. 1, 1985, p. 226.

60 Kenneth Waltz, *Theory of International Politics*, Addison-Wesley Publishing Company, Inc. 1979, p. 111.

61 John Mearsheimer, Structural realism, in Tim Dunne, Milja Kurki and Steve Smith (eds.), *International Relations Theories: Discipline and Diversity*, Oxford University Press, 2007, p. 74.

62 Joseph Grieco, Understanding the problem of international cooperation: the limits of neoliberal institutionalism and the future of realist theory, in David Baldwin (ed.), *Neorealism and neoliberalism: the contemporary debate*, Columbia University Press, 1993, p. 302.

63 Kenneth Waltz, *Theory of International Politics*, Addison-Wesley Publishing Company, Inc. 1979, p. 106.

64 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, pp. 485–507.

To the neorealist view of relative-gain problem, Waltz provides a classical explanation in “Theories of International Politics.” He states that,

When faced with the possibility of cooperating for mutual gain, states that feel insecure must ask how the gain will be divided. They are compelled to ask not “Will both of us gain?” but “Who will gain more?” If an expected gain is to be divided, say, in the ratio of two to one, one state may use its disproportionate gain to implement a policy intended to damage or destroy the other. Even the prospect of large absolute gains for both parties does not elicit their cooperation so long as each fears how the other will use its increased capabilities.⁶⁵

Grieco agrees on Waltz’s opinion on relative gains. He explains that “driven by an interest in survival, states are acutely sensitive to erosion of their relative capabilities,” and “seek to prevent increases in other’s relative capabilities.”⁶⁶ He suggests that “states are positional, not atomistic.”⁶⁷ Therefore, “state positionality may constrain the willingness of states to cooperate.”⁶⁸ He argues that under the condition of state positionality, “a state will decline to join, will leave, or will sharply limit its commitment to a cooperative arrangement if it believes that partners are achieving, or are likely to achieve, relatively greater gains.”⁶⁹ For Grieco,

in an anarchic world, (1) states fear for their lives: this fear means (2) that they can depend only upon their own capabilities to survive, (3) that changes in one’s capabilities relative to other states are a state’s central concern, and finally (4) that states will not accept cooperative agreements that are relatively unfavorable since this reduces their security.⁷⁰

As he concludes, “for realist theory, state efforts to cooperate entail these dangers plus the much greater risk, for some states, that cooperation might someday result in lost

65 Kenneth Waltz, *Theory of International Politics*, Addison-Wesley Publishing Company, Inc. 1979, p. 105.

66 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, p. 498.

67 *Ibid.* p. 499.

68 *Ibid.* p. 499.

69 *Ibid.* p. 499.

70 Helen Milner, International theories of cooperation among nations: strengths and weaknesses, *World Politics*, Vol. 44, Iss. 3, 1992, pp. 482–483.

independence or security.”⁷¹

2.2 The Constructivist View of International Cooperation

As constructivism is not a theory but rather an approach or ontology, it is not difficult to imagine that constructivists do not develop a cooperation theory, although they do point out an orientation to the study of international cooperation. Between the neorealist and neoliberal views of cooperation, constructivism is more friendly to the neoliberal view, as it “shares neoliberalism’s conclusion that cooperation is possible under anarchy.”⁷² But they differentiate from each other on how cooperation comes into existence. “A constructivist approach might begin with investigating how states understand their interests within a particular issue area. The distribution of identities and interests of the relevant states would then help account for whether cooperation is possible.”⁷³ Wendt discussed the different approaches of game-theoretic analysis (held by neorealists and neoliberals) and the constructivist analysis on cooperation, and pointed out that while the game theorists build their analysis on behavior, constructivists build their analysis on “cognition.” He writes that a constructivist analysis on cooperation “would concentrate on how the expectations produced by behavior affect identities and interests.”⁷⁴ He argues that “the process of creating institutions is one of internalizing new understandings of self and other, of acquiring new role identities, not just of creating external constraints on the behavior of exogenously constituted actors.”⁷⁵

3. Cooperation and Institution in Neoliberalism and Their Critiques

As Randall Schweller and David Priess wrote in 1997, “no topic in international relations theory has generated more debate over the last decade than the role of

71 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, p. 502.

72 Ted Hopf, The promise of constructivism in international relations theory, *International Security*, Vol. 23, No. 1, 1998, p. 189.

73 *Ibid.* p. 189.

74 Alexander Wendt, Anarchy is what states make of it: the social construction of power politics, *International Organization*, Vol. 46, No. 2, 1992, p. 417.

75 *Ibid.* p. 417.

international institutions—whether institutions matter, why states invest in them, and how they influence decision makers’ choices in world politics.”⁷⁶ It is not surprising that all the fighters from the three conventional IR theory camps joined the debate on institutions and contributed their wisdom. Among these three theory traditions, the neoliberal approach to institutions, which is labeled as a “functionalist approach,”⁷⁷ “utility-based approach,”⁷⁸ or “interest-based approach,”⁷⁹ represents “the mainstream approach to analyzing international regimes.”⁸⁰

Today, the study of international institutions “has matured and become a firmly established sub-field of International Relations.”⁸¹ Different from the neorealists who believe that “institutions have minimal influence on state behavior, and thus hold little promise for the promotion of stability in the post-Cold War world,”⁸² the neoliberals underline the role of institutions in world politics. However, institution as a term is even fuzzier than cooperation.⁸³ IR students have generated numerous definitions for institutions. A comprehensive discussion of these definitions is beyond the scope of this chapter. Instead, I list a few of the most widely quoted definitions here to help readers take a glimpse at this conception.

As the author of “After Hegemony: Cooperation and Discord in the World Political Economy”—one of whose major targets is to discuss the roles of institutions in cooperation, Keohane defines institution as “persistent and connected sets of rules (formal and informal) that prescribe behavioral roles, constrain activity, and shape

76 Randall Schweller and David Priess, A tale of two realisms: Expanding the institutions debate, *Mershon International Studies Review*, Vol. 41, No. 1, 1997, pp. 1–32.

77 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton University Press, 2005.

78 Chukwumerije Okereke and Harriet Bulkeley, Conceptualizing climate change governance beyond the international regime: a review of four theoretical approaches, *Tyndall Centre Working Paper*, No. 112, October 2007, p. 6.

79 Christer Jönsson and Jonas Tallberg, Institutional theory in international relations, in Jon Pierre, Guy Peters and Gerry Stoker (eds.), *Debating Institutionalism*, Manchester: Manchester University Press, 2008, pp. 86–114.

80 Andreas Hasenclever, Peter Mayer and Volker Rittberger, *Theories of international regimes (Cambridge Studies in International Relations, No.55)*, Cambridge University Press, 1997, p. 7.

81 Andreas Hasenclever, Peter Mayer and Volker Rittberger, Integrating theories of international regimes, *Review of International Studies*, Vol. 26, Iss. 1, 2000, p. 5.

82 John Mearsheimer, The false promise of international institutions, *International Security*, Vol. 19, No. 3, 1994, p. 7.

83 Robert Keohane, International institutions: two approaches, *International Studies Quarterly*, Vol. 32, No. 4, 1988, p. 382.

expectations,”⁸⁴ or “a general pattern or categorization of activity or to a particular human-constructed arrangement, formally or informally organized.”⁸⁵ Mearsheimer, who is actually a realist and does not believe that institution matters, takes international institution as “a set of rules that stipulate the ways in which states should cooperate and compete with each other.”⁸⁶ In an article particularly focuses on the definitions of institution, John Duffield recognizes four types of institutions: institutions as formal organizations, practices, rules, and norms. He defines institution as “relatively stable sets of related constitutive, regulative, and procedural norms and rules that pertain to the international system, the actors in the system (including states as well as nonstate entities), and their activities.”⁸⁷

A concept that is needed to be clarified here is “regime.” The number of definitions on regime is not less than that of institution. Stephen Krasner defines a regime as “sets of implicit or explicit principles, norms, rules and decision-making procedures around which actors’ expectations converge in a given area of international relations.”⁸⁸ This “collective definition”⁸⁹ is judged by Oran Young as “a remarkable achievement”⁹⁰ in the IR academy. Another major attempt to define regime is done by Arthur Stein. He contends that “regimes arise because actors forgo independent decision making in order to deal with the dilemmas of common interests and common aversions.”⁹¹ In dilemmas of common interests, as Stein explains, “the actors have a common interest in insuring a particular outcome” while in dilemmas of common aversions, “have a common interest in avoiding a particular outcome.”⁹² He also discusses three situations when a regime will not arise, 1) when each state obtains its most preferred outcome by making independent decisions; 2) when the actors share a most preferred outcome but neither

84 *Ibid.* p. 383.

85 *Ibid.* p. 383.

86 John Mearsheimer, The false promise of international institutions, *International Security*, Vol. 19, No. 3, 1994, p. 8.

87 John Duffield, What are international institutions?, *International Studies Review*, Vol. 9, No. 1, 2007, p. 2.

88 Stephen Krasner, Structural causes and regime consequences: regimes as intervening variables, *International Organization*, Vol. 36, No. 2, 1982, p. 186.

89 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton University Press, 2005, p. 57.

90 Oran Young, International regimes: toward a new theory of institutions, *World Politics*, Vol. 39, Iss. 1, 1986, p. 105.

91 Arthur Stein, Coordination and collaboration: regimes in an anarchic world, *International Organization*, Vol. 36, No. 2, 1982, p. 311.

92 *Ibid.* p. 309.

has a dominant strategy; 3) when some actors obtain their most preferred outcome while others are left aggrieved.⁹³

The difference between regime and institution is slight, but efforts were still exerted to draw a line between them. For example, Arthur Stein notices that in some cases the definition of international regimes is pushed to an extreme and defined as international institutions, which “equal the formal rules of behavior specified by the charters or constitutions of such institutions, and the study of regimes becomes the study of international organizations.”⁹⁴ Stephan Haggard and Beth Simmons view institutions as a broader concept of regimes, and argue that regimes might aid the “institutionalization” of portions of international life by regularizing expectations.⁹⁵ Oran Young views international regimes (and international orders) as components of international institutions. Compared with international orders, which are defined by Young as “broad, framework arrangements governing the activities of all (or almost all) the members of international society over a wide range of specific issues,” international regimes “are more specialized arrangements that pertain to well-defined activities, resources, or geographical areas and often involve only some subset of the members of international society.”⁹⁶ Despite these attempts to distinguish institutions from regimes, these two conceptions are now usually used interchangeably.⁹⁷

The neoliberals argues that three factors affect the propensity of actors to cooperate, including the mutuality of interest, the shadow of the future, and the number of actors, and institutions are of great significance in promoting states to cooperate.⁹⁸ Particularly, international institutions can facilitate cooperation through three ways.⁹⁹ First, institutions can increase the amount of information available to states about each other. According to Keohane, there are three particularly important sources of difficulty that

93 *Ibid.* pp. 299–324.

94 *Ibid.* p. 300.

95 Stephan Haggard and Beth Simmons, Theories of international regimes, *International Organization*, Vol. 41, No. 3, 1987, pp. 491–517.

96 Oran Young, *International cooperation: Building regimes for natural resources and the environment*, Cornell University Press, 1989, pp. 13–14.

97 John Mearsheimer, The false promise of international institutions, *International Security*, Vol. 19, No. 3, 1994, pp. 5–49.

98 Robert Axelrod and Robert Keohane, Achieving cooperation under anarchy: Strategies and institutions, *World Politics*, Vol. 38, Iss. 1, 1985, pp. 226–254.

99 Randall Schweller and David Priess, A tale of two realisms: Expanding the institutions debate, *Mershon International Studies Review*, Vol. 41, No. 1, 1997, pp. 1–32.

may stop cooperation from emerging: asymmetrical information, moral hazard, and irresponsibility. Appropriate institutions are expected to reduce the risks of these problems.¹⁰⁰ Second, institutions can lengthen the “shadow” of the future. The logic is that as institutions can embody and affect actors’ expectations, they can “alter the extent to which governments expect their present actions to affect the behavior of others on future issues.” “By sanctioning retaliation for those who violate rules, regimes create expectations that a given violation will be treated not as an isolated case but as one in a series of interrelated actions.”¹⁰¹ Third, institutions can reduce the relative costs of transactions. International regimes can “reduce transaction costs of legitimate bargains and increase them for illegitimated ones.”¹⁰² They can also affect transaction costs by “making it cheaper for governments to get together to negotiate agreements,” and thus “allow governments to take advantage of potential economies of scale.”¹⁰³

There are tonnes of critiques against the optimistic view on cooperation held by neoliberals, and the loudest voice is from the neorealists. The different understanding on anarchy is the source of disputes between neorealists and neoliberals on cooperation. According to Keohane, although anarchy means “a lack of common government in world politics,”¹⁰⁴ it does not necessarily mean that cooperation is just impossible, although he did say that achieving cooperation is difficult.¹⁰⁵ Grieco analyzed the logic of neoliberal understanding on cooperation and pointed out that, based on the neoliberal understanding on anarchy—where actors may find cheating possible and profitable, cheating is recognized as the major barrier in cooperation, and institutions are particularly helpful to ameliorate this problem. For neoliberals, “the problem of cooperation in anarchy is that states may fail to achieve it,” and “the worst possible

100 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton University Press, 2005, pp. 92-96. When responding to the realist critiques on relative-gain problem, Keohane argues that institutions can also “facilitate cooperation by helping to settle distributional conflicts and by assuring states that gains are evenly divided over time.” See: Robert Keohane and Lisa Martin, The promise of institutionalist theory, *International Security*, Vol. 20, No. 1, 1995, pp. 39–51.

101 Robert Axelrod and Robert Keohane, Achieving cooperation under anarchy: Strategies and institutions, *World Politics*, Vol. 38, Iss. 1, 1985, p. 234.

102 Robert Keohane, *After hegemony: Cooperation and discord in the world political economy*, Princeton University Press, 2005, p. 90.

103 *Ibid.* p. 90.

104 Robert Axelrod and Robert Keohane, Achieving cooperation under anarchy: Strategies and institutions, *World Politics*, Vol. 38, Iss. 1, 1985, p. 226.

105 *Ibid.* pp. 226–254.

outcome is a lost opportunity.”¹⁰⁶

One of the most aggressive neorealist works criticizing the neoliberal view on institutions is contributed by Mearsheimer: “The False Promise of International Institutions.” In the article, Mearsheimer points out that institutions “matter only on the margins.”¹⁰⁷ He argues that among all the three institutionalist theories (liberal institutionalism, collective security and critical theory), liberal institutionalism is the least ambitious. “It does not directly address the important question of how to prevent war, but focuses instead on explaining why economic and environmental cooperation among states is more likely than realists recognize.”¹⁰⁸ Even when applying to the economic issues, as Mearsheimer states, neoliberalism still faces a serious limit which is its ignorance to relative-gain concern. Therefore, the neoliberalism is “of little relevance in situation where states’ interests are fundamentally conflictual and neither side thinks it has much to gain from cooperation. In these circumstances, states aim to gain advantages over each other.”¹⁰⁹ Haggard, Stephan, and Beth Simmons also raised their accusation against neoliberalism. They criticize that neoliberalism is “not causal in a strong sense,” and it is “better at specifying when regimes will be demanded rather than suggesting how or when they will be supplied.”¹¹⁰ They also remind neoliberals that the “proper test of a functional theory is not the mere existence of a regime, but the demonstration that actors’ behavior was motivated by benefits provided uniquely, or at least more efficiently, through the regime, or by reputational concerns connected to the existence of rules.”¹¹¹ The authors point out that while neoliberals emphasize how the facilitating role of regimes helps them realize common interests, they forget that “regimes are also arenas for conflict and the exercise of power.”¹¹²

Summarizing the neoliberal arguments and the neorealist critiques, four conclusions can be drawn. For neoliberals, 1) neoliberalism holds an optimistic attitude towards international institutions and cooperation, and enjoys a powerful explanatory in political

106 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, p. 502.

107 John Mearsheimer, The false promise of international institutions, *International Security*, Vol. 19, No. 3, 1994, p. 7.

108 *Ibid.* p. 14.

109 *Ibid.* p. 15.

110 Stephan Haggard and Beth Simmons, Theories of international regimes, *International Organization*, Vol. 41, No. 3, 1987, p. 506.

111 *Ibid.* p. 508.

112 *Ibid.* p. 509.

economy and environmental issues; 2) international cooperation is difficult to achieve and maintain, but it is possible, and institutions can help promote international cooperation. For neorealists, 1) although neoliberalism is more powerful in explaining economic and environmental issues, it is incapable of explaining security issues; 2) neoliberalism ignores the relative-gain problem, and thus is ineffective when states' interests are fundamentally conflictual, including in the economic sphere.

4. Neoliberalism as the Theoretical Framework of This Study

Selecting a suitable theoretical approach is never an easy task. However, it might help make the proper choice if one follows the advice offered by Peter Katzenstein, Robert Keohane, and Stephen Krasner. They suggest IR students to choose their theoretical approach depending on “whether they are principally committed to advancing a theoretical viewpoint or to solving specific empirical problems, their own analytical predispositions, their methodological tools, the data to which they have access, the resources at their disposal, and the values they hold.”¹¹³

4.1 The Limits of Neorealist View on Cooperation

Neorealists have developed a theory on cooperation among states as has briefly introduced earlier. However, specifically to this study, the neorealist view faces some limits, both theoretically and practically, that make it not a perfect theory candidate. First, neorealists are pessimistic to international cooperation. This pessimism is particularly shared by traditional realists. Although the neorealists agree that cooperation is possible among states, but they still hold the idea that even though there is cooperation, it might be fragile. However, one of the facts of that this study is built on is that EU-China environmental cooperation has been evolving and great achievements have been recorded in the last several decades. This is difficult for the neorealism to explain. Second, neorealists argue that the relative-gain problem is the major obstacle for reaching cooperation. This argument is strong in national security affairs, rather than

¹¹³ Peter Katzenstein, Robert Keohane, and Stephen Krasner, International organization and the study of world politics, *International Organization*, Vol. 52, No. 4, 1998, p. 685.

in political economy affairs, let alone environmental affairs. Actually, in EU-China environmental cooperation, China is apparently the side that gains, while the EU cannot get considerable tangible benefits in this relationship—at least the gains of the EU are much less than that of China. This fact might be confusing to neorealists. Third, on the role of institutions, neorealists believe that international institutions play marginal roles in IR. However, in the evolution of EU-China environmental relationship, numerous institutions have been established and have promoted the cooperation between the EU and China. Therefore, a gap exists between the neorealism and the practice of EU-China environmental cooperation. These factors that emerge when the neorealism is applied to understand EU-China environmental cooperation make it unsuitable to the study.

4.2 The Limits of Constructivist View on Cooperation

Although with some critiques, it is arguably that constructivism offers an enlightening dimension to understand international politics. However, this study has no intention to apply constructivism to serve as the theoretical framework. The reasons are three-fold. First, as criticized by some scholars, constructivism is not a theory, but an approach, which means that it does not have a “theoretical” view on international cooperation. Second, the application of the constructivist “approach” to international cooperation may lead the study far out of sphere. Constructivism focuses on identity and idea, and emphasizes their impact to states’ behaviors. This makes it have to be supported by domestic analyses in an IR study. For example, to make the constructivist approach applicable in this study, it is necessary to discuss the identity construction and knowledge formation of the EU and China on environmental issues, before analyzing why both sides take environment an area for cooperation. And because of the abstraction of these conceptions, these endeavors are deemed to be very difficult and complicated, if not just impossible, and are far beyond the ambition of this thesis. Third and the last reason is that this study tries to discuss the environmental cooperation between the EU and China, and this discussion is naturally restricted an bilateral level. There is an implicit assumption behind this discussion, which is that the EU and China are acting as rational and independent units. However, this assumption to international actors is not shared by constructivists.

4.3 Neoliberal Theory and This Study

The selection of neoliberalism as the theoretical framework is motivated by its theoretical features that make it suitable to this study, and its theoretical advantages over neorealism and constructivism.

First, the particular attention that neoliberals pay to non-security issues fits the need of this study. Although conflicts exist between the neoliberals and neorealists on the role of institutions, even neorealists do not disagree that neoliberalism explains better in the environmental politics realm, where force and relative gains are not serious concerns. As admitted by Grieco, while realism shares greater explanatory power in national security affairs, international political economy would appear to be neoliberalism's preserve.¹¹⁴ This argument is echoed by Robert Powell, who concludes that "if the use of force is no longer at issue, then a state's relative loss will not be turned against that state. Relative gains no longer matter and cooperation now becomes feasible. This is in keeping with the expectations of neo-liberal institutionalism."¹¹⁵ Therefore, neoliberalism is more competitive in explaining environmental cooperation among all these three theories.

Second, as elaborated earlier, EU-China environmental cooperation has been developing steadily in the last few decades, and this cooperation benefited greatly from institutions. In addition, it is not evidenced that the two sides paid a particular attention to relative gains in their environmental cooperation. Compared with neorealism, which is pessimistic to international cooperation, the optimistic attitude held by neoliberals on international cooperation, and their emphasis on absolute gains and institutions make neoliberalism coincide with the general facts of EU-China environmental cooperation. Third, as has been introduced, constructivism is not an IR theory, but an approach. Although it offers a new dimension for the study of international cooperation, it does not have a theory on this issue. Compared with constructivism, the neoliberalism is a theory and does not possess an anti-rationalism position. Its theory on international

114 Joseph Grieco, Anarchy and the limits of cooperation: a realist critique of the newest liberal institutionalism, *International Organization*, Vol. 42, No. 3, 1988, pp. 485–507; See also: John Mearsheimer, The false promise of international institutions, *International Security*, Vol. 19, No. 3, 1994, pp. 5–49.

115 Robert Powell, Absolute and relative gains in international relations theory, *American Political Science Review*, Vol. 85, No. 4, 1991, p. 1316.

cooperation is clear and applicable. Based on these reasons, neoliberalism is recognized as the most suitable theory for this study and to be exercised as the theoretical framework.

Part II. The EU and China's Environmental Policy and Diplomacy

Chapter III. The EU's Environmental Policy and Global Leadership

Environment was marginal in 1950s and the Treaty of Rome had no regulations on pollution control and environmental protection. In the 1960s, the awareness of environmental protection arose and the Western Europe began to express concerns over environmental degradation.¹ In the summer of 1972, the UNCHE was held. As a participant, the EU responded promptly to the conference and started to implement its first EAP in 1973, which covered the period from 1973 to 1976 and marked the emergence of the European environmental policy.

After a process of integration of over one decade, the European states realized the significance and necessity of a stronger and more coordinated environmental policy. The SEA (which went into force in 1987) provided a legal basis for the consolidated environmental legislation at the European level, and marked the progress that the European states achieved in this direction.² The TEU that was signed in 1992 further lifted environment on the agenda of the Union, and balancing economic growth, social progress, and environmental protection became a major target of the EU.³ In this treaty, the cooperation between the EU/member states and third countries/international organizations was emphasized. In parallel, an EU's external environmental policy also gradually rose to the surface with its single environmental policy coming into being. For the EU, it not only strongly concerns its own environmental issues, but also commits to assist the developing countries in environmental governance. This external dimension of the EU's environmental policy turned to a global leadership in the 1990s. With the European integration went into depth and the rise of global environmental politics, the EU began to play an increasingly significant role on the global environmental politics stage. This is most clearly mirrored in a series of climate change negotiations and the enforcement of the Kyoto Protocol.

1 Boban Stojanović and Snežana Radukić, EU environmental policy and competitiveness, *Panoeconomicus*, Vol. 53, No. 4, 2006, pp. 471–485.

2 Emanuela Orlando, The evolution of EU policy and law in the environmental field: achievements and current challenges, *TRANSWORLD Working Paper 21*, April 2013.

3 Papadaki Gioti, European Environmental Policy and the Strategy “Europe 2020,” *Regional Science Inquiry*, Vol. 4, No. 1, 2012, pp. 151–158.

This chapter aims at providing a brief review over the EU's environmental policy and its role in global environmental governance, by analyzing some key points dug out from seven EAPs and the treaties which are critical in the formation of the EU. In the remainder of this chapter, I implement my discussion in three sections. In the first section, I discuss the evolution of the EU's environmental policy based on a division of four phases. The main length is invested in the analysis of the seven EAPs and the regulations in those key treaties. Section two is an analysis of the external dimension of the EU's environmental policy. The argument of this section is that the EU has been consistently presenting an active attitude to international environmental cooperation along with the emergence of its internal environmental policy. In the third section, I discuss the EU's leadership in international environmental governance, and due to the significance of climate change in global environmental politics, most words of this section are to be spent on it.

One point that is necessarily to be made clear here is that the evolution of the EU's environmental policy is never a topic without ambiguity, thus a discussion on it in a few paragraphs is with serious challenges. These challenges do not only lie in the natural complexity of environmental issues—as have been introduced in the definition of environment, and the long history of the EU's environmental governance, but also due to the EU's special governmental system. The EU, as widely known, is not a sovereign state, and specifically in the environmental area, although the EU is now enjoying the power of formulating and implementing environmental policies, this power is not granted from the very beginning. Therefore, during the formation of the EU's environmental policy, various actors have been playing their roles, including the EC, European Council, European Parliament, Council of Ministers, the European Court of Justice, and some member states and societal actors.¹ For example, the EU's first major breakthrough in the environmental field was a legal decision (European Road Transport Agreement) by the European Court of Justice in 1971, which addressed cross-border transportation policy issues within the Union.² And some of the EU members have

1 Rüdiger Wurzel and James Connelly, Introduction: European Union political leadership in international climate change politics, in Rüdiger Wurzel and James Connelly (eds.), *The European Union as a Leader in International Climate Change Politics*, London and New York, NY: Routledge, 2011, p. 9.

2 Chad Damro, Iain Hardie and Donald MacKenzie, The EU and Climate Change Policy: Law, Politics and Prominence at Different Levels, *Journal of Contemporary European Research*, Vol. 4, Iss. 3, 2008, pp. 179–192; John Vogler, The European Union as a global environmental policy actor Climate change,

been promoting the emergence of the EU's environmental policy, such as Germany, Denmark, and The Netherlands that are regarded as “motors” of the EU's environmental policymaking.³ Considering the complexity of the EU's environmental policymaking and the purpose of the first section—reviewing briefly the evolution of EU's environmental policy, it would be helpful to carry out the discussion by following some key clues.

The first clue that I recognize in this section (and also the second section, for the discussion of EU's external environmental policy) is the treaties that are critical in the formation of the EU, such as the SEA, the TEU, and the Amsterdam Treaty. The key roles of these treaties in the formation of the EU—and thus its environmental policy are with little doubt. The second recognized clue includes the seven EAPs, which cover the overall evolution of the EU's environmental policymaking. However, the selection of the seven EAPs is not only because that they witnessed the evolution of the EU's environmental policymaking, but also due to their particular significance. These EAPs were formulated by the Commission and aimed at “setting the appropriate policy framework in accordance with the priorities adopted during their effective period.”⁴ They are considered as “political declarations, reflecting the conceptualization of policy behind the practice of EU environmental policy”⁵ and thus viewed as “central documents”⁶ of the EU's environmental policy.

1. The Evolution of the EU's Environmental Policy

As elaborated in the literature review, multiple arguments have been raised on the

in Rüdiger Wurzel and James Connelly (eds.), *The European Union as a Leader in International Climate Change Politics*, London and New York, NY: Routledge, 2011, p. 23.

3 Duncan Liefferink and Mikael Skou Andersen, Strategies of the “green” member states in EU environmental policy-making, in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 49.

4 Papadaki Gioti, European Environmental Policy and the Strategy “Europe 2020,” *Regional Science Inquiry*, Vol. 4, No. 1, 2012, pp. 151–158.

5 Albert Weale et al., *Environmental governance in Europe: an ever closer ecological union?*, OUP Catalogue, 2002, p. 56.

6 Duncan Liefferink and Mikael Skou Andersen, The Innovation of EU Environmental Policy, in Duncan Liefferink and Mikael Skou Andersen (eds.), *The Innovation of EU Environmental Policy*, Scandinavian University Press, 1997, p. 14.

evolution of EU's environmental policy. In this section, I learn the arguments of other researchers and argue that the formation of EU's environmental policy can be traced back to 1957. I take the year of 1973, 1987 and 1993 as the three landmarks of the evolution of the EU's environmental policy.

1.1 Phase I: 1957–1972

The first phase of the evolution of the EU's environmental policy extends from 1957 when the Treaty of Rome was signed to 1972, before the endorsement of the first EAP. During these around 15 years, not only in the EU, but also in the whole world, environmental protection was still in infancy and the government policies on environment were rare. For the EU, although some environmental regulations were formulated, economic issues had always been prior concerns, and there was not an "European environmental policy."

The integration of Europe, from the very beginning was under the guide of the so-called Monnet Method. The Monnet Method which was proposed by Jean Monnet and the then French Foreign Minister Robert Schuman, "requires policymakers to focus upon apparently technical matters of a 'low-politics' variety in order to advance greater political cooperation among Member States."⁷ By focusing on the low-politics and with the help of the logic of spill-over, fathers of the EU first put their efforts to the integration of energy governance and steel production. In 1951, six western European states signed the Treaty of Paris and established the European Coal and Steel Community. Six years later, heads of these states met again and signed the Treaty of Rome, established the European Atomic Energy Community (Euratom) and the EEC. However, no explicit reference to the idea of environmental protection can be found in the Treaty of Rome. The primary aim of the six founding member states was to coordinate their policies in economic affairs, and finally establish a common market in which goods, persons, services and capital could move without obstacles (Article three).⁸ In fact, as a treaty focused on economic affairs, the Treaty of Rome produced restriction to the EU's environmental protection. On the one hand, "there were no

7 Albert Weale, *European Environmental Policy by Stealth: The Dysfunctionality of Functionalism?* in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 337.

8 *The Treaty of Rome*, 1957, See: http://ec.europa.eu/archives/emu_history/documents/treaties/rometreaty2.pdf.

explicit, formal legal provisions to support any Community-wide action,” on the other hand, “whatever action could be taken under the available general provisions had to be directly related to the objective of economic and community harmonization.”⁹

Although was not included by the Treaty of Rome, environmental measures were not completely absent in the first 15 years of the EU's history. As counted by John McCormick, from 1957 to 1972, nine specific environmental initiatives were formulated, including one directive and two amendments establishing standards to protect workers and the public from ionizing radiation, two directives on vehicle emissions, one on noise from vehicle exhausts, one on the classification, packaging and labeling of dangerous chemicals (together with one amendment) and one directive on carbon monoxide and hydrocarbon emissions from road vehicles.¹⁰ But, these measures were “incidental to the overriding economic objective” and “cannot be regarded as adding up to any sort of proper and coherent policy.”¹¹

1.2 Phase II: 1973–1986

The second phase begins with the publication of the EU's first EAP and ends before the TEU came into force in 1987. This phase can be labeled as a phase of the formation of the single EU environmental policy. During this phase, the EU exerted great efforts towards a single environmental policy and by the end of this phase, an “EU's environmental policy” had come into existence.

After a gradual rise of environmental protection in the 1950s and 1960s, the world welcomed the opening of the UNCHE in Stockholm in 1972. The “Declaration of the United Nations Conference on the Human Environment,” which was passed during that historical event, declared for the first time that “the protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world; it is the urgent desire of the peoples of the whole world and the duty of all Governments.”¹² Responding to this conference, The

9 Philip Hildebrand, *The European Community's Environmental Policy, 1957 to '1992': From Incidental Measures to an International Regime?* in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 23.

10 John McCormick, *Environmental policy in the European Union*, Basingstoke: Palgrave, 2001, p. 45.

11 Philip Hildebrand, *The European Community's Environmental Policy, 1957 to '1992': From Incidental Measures to an International Regime?* in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 24.

12 *Report of the United Nations Conference on the Human Environment*, A/CONF.48/14/Rev.1, 1972,

First Summit Conference of the Enlarged Community was convened in October 1972 in Paris. This summit declared that,

*Economic expansion is not an end in itself. Its firm aim should be to enable disparities in living conditions to be reduced. It must take place with the participation of all the social partners. It should result in an improvement in the quality of life as well as in standards of living. As befits the genius of Europe, particular attention will be given to intangible values and to protecting the environment, so that progress may really be put at the service of mankind.*¹³

At this conference, the heads of states requested the Community to draw an action program on environment before 31 July, 1973. “This was the first time that environmental policy was contemplated as a potential domain of cooperation.”¹⁴

In November 1973, the first EAP was decided upon. It was formulated with impetus of three factors: an increasing concern among member states on the relationship between environmental protection and trade distortions, the need to initiate a coherent response to the increasing political pressure from environmentalists, and the inherently transnational characteristics of much of Europe’s pollution which requires supranational efforts.¹⁵ According to this EAP, “the aim of a Community environment policy is to improve the setting and quality of life, and the surroundings and living conditions of the peoples of the Community.”¹⁶ In addition, 11 guiding principles of the EU’s environmental policymaking were also raised in this EAP. These principles cover the scope from the preventive actions and polluter pays to the emphasis to international

See: <http://www.un-documents.net/aconf48-14r1.pdf>.

13 European Coal and Steel Community, European Economic Community, European Atomic Energy Community Commission, Sixth General Report on the Activities of the Communities 1972, February 1973, p. 8, See: http://aei.pitt.edu/31349/1/GEN_RPT_6th_1972_1.pdf.

14 Eloi Laurent and Jacques Le Cacheux, The EU as a global ecological power: The logics of market integration, Paper prepared for the Seventeenth International Conference of the Council for European Studies, Montreal, Canada April 15-17, 2010, See: <https://spire.sciencespo.fr/hdl:/2441/eu4vqp9ompqlr09hac1p8kco/resources/wp2010-08.pdf>.

15 Philip Hildebrand, The European Community’s Environmental Policy, 1957 to ‘1992’: From Incidental Measures to an International Regime? in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 28.

16 Declaration of the Council of the European Communities and of the Representatives of the Governments of the Member States Meeting in the Council of 22 November 1973 on the Programme of Action of the European Communities on the Environment, *Official Journal of the European Communities*, Vol. 16, 20 December 1973, No C 112/5, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:1973:112:FULL&from=EN>.

environmental cooperation. It calls for measures in three different categories, include “the reduction of pollution and nuisances as such; the improvement of the environment and the setting of life as well as the joint action in international organizations dealing with the environment.”¹⁷

The second EAP followed and was adopted in 1977 after the expiration of the first EAP. It aimed at continuing and expanding the actions taken within the framework of the first EAP, with special emphasis laid at reinforcing the preventive nature of Community policy, the non-damaging use and rational management of space and the environment and natural resources.¹⁸ The third EAP existed between 1982 and 1986. Compared with the first two programmes, which contained a series of broad objectives, the third EAP attempted to narrow its attention and listed 13 areas of priority: integration, environmental impact assessments, reduction of soil pollution, the Mediterranean, noise, transfrontier pollution, hazardous chemicals, waste management, clean technology, environmentally sensitive areas, and cooperation with the developing world.¹⁹ Although during the second phase of the evolution of the EU's environmental policy, three EAPs were adopted, they were very much principle-oriented which led to little practical effect. “Without enforcement and implementation mechanisms, the member-states did not seem to treat the proposals as anything more than suggestions.”²⁰

The first fifteen years of the EU's environmental policy, as defined by Philipp Hildebrand, “was a ‘responsive’ one in that it evolved according to the momentary economic, political and social circumstances.”²¹ It was largely powered by the general

17 Philip Hildebrand, *The European Community's Environmental Policy, 1957 to '1992': From Incidental Measures to an International Regime?* in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 25.

18 *Ibid.* p. 25.

19 Albert Weale et al., *Environmental governance in Europe: an ever closer ecological union?*, OUP Catalogue, 2002, p. 59; Resolution of the Council of the European Communities and of the representatives of the Governments of the Member States, meeting within the Council, of 7 February 1983 on the continuation and implementation of a European Community policy and action programme on the environment (1982 to 1986) (The Third EAP), *Official Journal of the European Communities*, Vol. 27, C 46, 17 February 1983, pp. 1–16.

20 Tamara Crockett and Cynthia Schultz, *The Integration of Environmental Policy and the European Community: Recent Problems of Implementation and Enforcement*, *Columbia Journal of Transnational Law*, Iss. 1, 1991, pp. 169–192, cited by Julie Harms, *European Community's Development of an Environmental Policy: The Treaty of European Union*, *Tulane Environmental Law Journal*, Vol. 6, 1992–1993, p. 402.

21 Philip Hildebrand, *The European Community's Environmental Policy, 1957 to '1992': From Incidental Measures to an International Regime?* in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 29.

concern of environmental protection as a potential cause for trade distortions, public pressure and the direct effects of environmental accidents. During this period, although the EU's environmental policymaking had been making progress, it "does not stand on its own feet yet." "It is still at least partly subordinated to the paramount objective of economic growth."²²

1.3 Phase III: 1987–1992

The years between 1987 and 1992 constitute the third phase of the evolution of the EU's environmental policy. In these few years, the world and the EU experienced dramatic political changes. Along with these changes, the EU's environmental policy also went through a transaction.

In the late 1980s and early 1990s, the EU confronted a fundamental change of global politics. Thanks to the fall of Berlin Wall and the end of Cold War, the tension around the world—particularly in the Europe eased considerably. Taking advantage of this historical opportunity, the EU accelerated its steps of integration and took a leap forward towards a more unified and solid environmental policy. The SEA (which was signed in 1985 and went into force in 1987) inserted the Title VII on "Environment" (No. 130r to 130s). The SEA produced a great impact to the EU's environmental policymaking. This influence is at least three-fold: 1) the direct impact of the soon-to-be-created single market upon the European environment, 2) the effect of the new environmental provisions of the SEA, 3) and the impact procedurally and substantively of new voting procedures to be used in EU decision-making.²³ The procedural and substantive impact is regarded as the main institutional effect of the SEA, as it introduced the cooperation procedure and provided "a new channel of EU decision-making which allowed the European Parliament a second reading of draft EU legislation."²⁴ Indirectly, the SEA also intended to give European publics a greater

22 *Ibid.* p. 31.

23 Philip Hildebrand, The European Community's Environmental Policy, 1957 to '1992': From Incidental Measures to an International Regime? in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, pp. 33–37, cited from Albert Weale et al., *Environmental governance in Europe: an ever closer ecological union?*, OUP Catalogue, 2002, p. 43.

24 Albert Weale et al., *Environmental governance in Europe: an ever closer ecological union?*, OUP Catalogue, 2002, p. 46.

power over environmental policy formulation.²⁵

To be more specific, these regulations impacted the Community environmental policy in four ways.²⁶ First, Article 130r (1) outlines the Community environmental policy objectives, which are to preserve, protect, and improve the quality of the environment; to contribute towards protecting human health; to ensure a prudent and rational utilization of natural resources. These objectives are sufficiently broad and bring almost all environmental issues within the competence of Community legislation. Second, the Article 130r (2) mandates legal force to the principles which had been evolving in the EAPs: principle of prevention, rectification at source and polluter pays, and also formalizes the new principle that “environmental protection requirements shall be a component of the Community’s other policies.”²⁷ Third, the Article 130r (3) elaborates four basic criteria that the Community needs to consider before adopting an environmental policy: available scientific and technical data; environmental conditions in the various regions of the Community; the potential benefits and costs of action or of lack of action; the economic and social development of the Community as a whole and the balanced development of its regions. Fourth, the Article 130r (4) lays down the principle of subsidiarity, which determines whether appropriate action is to be taken at the Community or at the member states level. By introducing these articles, the treaty on one hand confirmed environmental protection as an explicit goal of the EU, on the other hand, greatly enhanced the power of the EU institutions in environmental matters.

Drafted after the SEA, the fourth EAP adopted in 1987 was “not only to ensure continuity between the pre- and post-SEA eras, but also to confirm the new approach within the new treaty.”²⁸ It increased the number of priorities of the EU’s environmental policy from 13 in the third EAP to 19, include such as the development of strict environmental standards, integration, environmental impact assessments, the

²⁵ *Ibid.* p. 46.

²⁶ Philip Hildebrand, *The European Community’s Environmental Policy, 1957 to ‘1992’: From Incidental Measures to an International Regime?* in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 35.

²⁷ Resolution of the Council of the European Communities and of the representatives of the Governments of the Member States, meeting within the Council of 19 October 1987 on the continuation and implementation of a European Community policy and action programme on the environment (1987–1992) (The fourth EAP), *Official Journal of the European Communities*, Vol. 30, 7/12/1987, No C 328/2, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:1987:328:FULL&from=EN>.

²⁸ Albert Weale et al., *Environmental governance in Europe: an ever closer ecological union?*, OUP Catalogue, 2002, p. 60.

implementation of the polluter-pays principle, hazardous chemicals, biotechnology, clean technology, transboundary pollution, participation in international organization, and cooperation with developing countries.²⁹ Taking over the efforts of the third EAP on promoting the integration of social, industrial, agricultural and economic policies, the fourth EAP “essentially completed and formalized the notions of earlier Community policy.”³⁰

The TEU further elevated the position of environmental protection on the EU’s political agenda, by declaring that “environmental protection requirements must be integrated into the definition and implementation of other Community policies.”³¹ In addition, it included the term “environment” in key provisions of Article two and three, and also granted EU institutions, such as the European Parliament and European Court of Justice greater power in environmental matters. It regulates that “the Community shall ... promote throughout the Community a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment.”³² According to this regulation, the target of the EU’s environmental policy is “to strike the balance between economic activity and the environment in such a way as to achieve ‘sustainable development’.”³³ Although promoted the Union’s environmental policy remarkably, it still incurred some critiques, such as its failure to simplify the decision-making procedures, the potential conflict of legal basis, and its neglect to the principle of sustainable development that was raised at the 1992 UNCED. These problems were not solved until the Amsterdam Treaty took into effect in 1999.³⁴

1.4 Phase IV: 1993–Present

The UNCED convened in 1992 led the world into an era of sustainable development.

²⁹ *Ibid.* p. 60.

³⁰ Philip Hildebrand, The European Community’s Environmental Policy, 1957 to ‘1992’: From Incidental Measures to an International Regime? in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 31.

³¹ *Treaty on European Union*, 1992, p. 58, See: https://europa.eu/european-union/sites/europaeu/files/docs/body/treaty_on_european_union_en.pdf.

³² *Ibid.* p. 11.

³³ Peter Kunzlik, *Environmental Policy*, Longman Information & Reference, 1994, p. 21. “Sustainable Development” was defined by the *Brundtland Report* published in 1987 as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” See: *Report of the World Commission on Environment and Development: Our Common Future*, <http://www.un-documents.net/ocf-02.htm>.

³⁴ EU law and publications-*Environment*, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:a15000>.

The fifth EAP, which was approved in 1993, explicitly entitled with “sustainable development.” It mirrored the turning of the EU’s environmental policy to this direction and marked a new phase of the evolution of the EU’s environmental policy. The fifth EAP “identifies the achievement of sustainable development as the central objective of community environmental policy, elaborates new concepts and techniques to be adopted to achieve that goal and reconciles them with the objectives and principles laid down by the Treaty.”³⁵ It recognized five priorities, in which the “full integration of environment and other policies” reconfirmed the goal of the EU on environmental policy integration and thus echoed the words in SEA.³⁶

As argued by Janet Hunter and Zachary Smith, the fifth EAP represented a new departure of European environmental policymaking. This is evidenced in three ways. First, different from the previous four EAPs, the fifth EAP revolved around themes, such as “shared responsibility” and “partnership,” rather than around environmental issues. By doing so, the fifth EAP provided a long-term strategy, rather than lists of actions and principles as the first four EAPs did.³⁷ Second, it tried to develop new institutional structures and introduce a bottom-up approach to environmental action, focusing on specific actors rather than on European regulatory mechanism.³⁸ Third, as mentioned earlier, this EAP brought the idea of sustainable development into EU’s environmental policymaking and required the member states to make their activities sustainable.³⁹

The Amsterdam Treaty was signed by the member states in October 1997. This treaty amended the TEU, Treaty of Rome and related acts, and aimed at providing an

35 Peter Kunzlik, *Environmental Policy*, Longman Information & Reference, 1994, p. 66.

36 A full text of the fifth EAP, please refer to: Towards sustainable development: A European Community programme of policy and action in relation to the environment and sustainable development, *Official Journal of the European Communities*, 17. 5. 93, <http://ec.europa.eu/environment/archives/action-programme/env-act5/pdf/5eap.pdf>.

37 Janet Hunter and Zachary Smith, *Protecting our environment—lessons from the European Union*, State University of New York Press, Albany, 2006, p. 6; See also: Albert Weale et al., *Environmental governance in Europe: an ever closer ecological union?*, OUP Catalogue, 2002, pp. 61–62.

38 See also: Rüdiger Wurzel, Environmental Policy, in Juliet Lodge (ed.), *The European Community and the Challenge of the Future*, Printer Publishers, London, 1993, p. 190.

39 For similar discussion on the fifth EAP, please refer to: Susan Baker et al., Introduction: The theory and practice of sustainable development in EU perspective, in Susan Baker et al. (eds.), *The politics of sustainable development: Theory, policy and practice within the European Union*, London: Routledge, 1997, p. 29; Susan Baker, The evolution of European Union environmental policy: From growth to sustainable development? in Susan Baker et al. (eds.), *The politics of sustainable development: Theory, policy and practice within the European Union*, London: Routledge, 1997, p. 94.

overview of the EU's reform, with particular emphasis on institutional aspects.⁴⁰ In the evolution of the EU's environmental policy, the role of Amsterdam Treaty is that it strengthened the commitment to achieve sustainable development and environmental policy integration, and greatly empowered the European Parliament by extending its co-decision-making powers.⁴¹ Also, the treaty for the first time allowed a small group of states to go ahead with new forms of cooperation without all the EU states being involved.⁴²

Since the adoption of the SEA, the integration of environmental policy into other policy areas had been explicitly expressed. This goal was repeated in the fifth EAP, the TEU, and the Amsterdam Treaty. However, it was not until the European Council meeting held in Luxembourg in December 1997 that this issue was put on the agenda. At this Council meeting, the Commission was required to submit a strategy to achieve the goal of integrating environmental protection requirements into the Community's policies and activities.⁴³ Responding to this request, the Commission submitted the "Partnership for Integration—A Strategy for Integrating Environment into European Union Policies" to the Council in the form of Commission Communication in May 1998. And in June 1998, the European Council meeting in Cardiff laid the foundations for the so-called Cardiff Process.⁴⁴

In 2002, the sixth EAP—"Environment 2010: Our Future, Our Choice" was ratified by the European Parliament and the Council. It ranged from 2002 to 2012, and identified four priority areas: climate change, nature and biodiversity, environment and health, and natural resources and waste.⁴⁵ This EAP focused on generating more input

40 Jean-Claude Piris and Giorgio Maganza, *The Amsterdam Treaty: Overview and Institutional Aspects*, *Fordham International Law Journal*, Vol. 22, Iss. 6, 1998.

41 Albert Weale et al., *Environmental governance in Europe: an ever closer ecological union?*, OUP Catalogue, 2002, p. 48.

42 Andrew Jordan and Jenny Fairbrass, *European Union Environmental Policy after the Nice Summit*, in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 43.

43 *Luxembourg European Council, 12 and 13 December 1997, Presidency Conclusions*, See: http://www.europarl.europa.eu/summits/lux1_en.htm?textMode=on#envi.

44 For more introduction on the EU environmental integration and Cardiff Progress, please refer to: *Environmental Integration*, See: <http://ec.europa.eu/environment/integration/integration.htm>, last updated: 09/12/2016; *A strategy for integrating the environment into EU policies*, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l28075>, last updated: 12/05/2006.

45 European Commission, *Environment 2010: Our Future, Our Choice-6th EU Environment Action Programme*, Luxembourg: Office for Official Publications of the European Communities, 2001, See: http://ec.europa.eu/environment/air/pdf/6eapbooklet_en.pdf. More information relates to the sixth EAP,

from citizens and more cooperation from business, on better implementation of existing legislation, and on integrating environmental interests into all relevant policy areas.⁴⁶ Following the sixth EAP, the seventh EAP entitled “Living Well, within the Limits of Our Planet” was formulated in 2013. In this EAP, nine priority objectives for the period up to 2020 were identified, such as protecting nature and strengthening ecological resilience; boosting sustainable, resource-efficient, low-carbon growth; and effectively addressing environment-related threats to health.⁴⁷ As commented by Hedegaard, the then EU Commissioner for Climate Action: “this is another step forward in making the EU a resource-efficient, green and competitive low-carbon economy.”⁴⁸

Sticking with the clues of the several key documents in the formation of the EU and the seven EAPs, four phases of the evolution of the EU's environmental policy are recognized: 1957–1972, 1973–1986, 1987–1992 and 1993–present. The evolution of the EU's environmental policy contains three features. The first feature is of its remarkable capacity for steady growth, which means that it “has been (and remains) largely unaffected by the political and economic vicissitudes, periodic budgetary crises and recurrent waves of Euro-pessimism that have continually frustrated European integration.”⁴⁹ The second feature is that the EU's environmental policy today is more than a sum of environmental policies of member states. Now, the EU not only possesses the power of making environmental policies and sanctioning the actors that failed to uphold its laws and policies, but also possesses the power of negotiating externally with other states. The third feature is that “the pre-existing environmental policies of the Member States are no longer politically or legally separate from EU environmental

please refer to: The Sixth Environment Action Programme of the European Community 2002–2012, See: <http://ec.europa.eu/environment/archives/action-programme/index.htm>, last updated: 27/08/2015.

46 Janet Hunter and Zachary Smith, *Protecting our environment—lessons from the European Union*, State University of New York Press, Albany, 2006, p. 68.

47 DECISION No 1386/2013/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 November 2013 on a General Union Environment Action Programme to 2020 ‘Living well, within the limits of our planet’ (The Seventh EAP), *Official Journal of the European Union*, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013D1386>.

48 *European Commission welcomes the 7th Environment Action Programme becoming law*, Brussels, 20 November 2013, See: http://europa.eu/rapid/press-release_MEMO-13-1020_en.htm, last updated: 24/01/2017.

49 Andrew Jordan, Introduction: European Union Environmental Policy—Actors, Institutions and Policy Processes, in Andrew Jordan (ed.), *Environmental Policy in the European Union: Actors, Institutions & Processes*, Earthscan, 2005, p. 1.

policy,”⁵⁰ and had went through a progressive change of “Europeanization.”⁵¹

2. The External Dimension of EU’s Environmental Policy

The foundations of the EU’s engagement with international environmental politics are to be found in the evolution of its internal policies.⁵² Among the 11 guiding principles formulated in its first EAP, the EU spent two articles expressing its interest in engaging with the international environmental governance. The Article seven requires member states to take the interests of developing countries into account in their environmental policies. It states that,

*The Community and its Member States must take into account in their environment policy the interests of the developing countries, and must in particular examine any repercussions of the measures contemplated under that policy on the economic development of such countries and on trade with them with a view to preventing or reducing any adverse consequences as far as possible.*⁵³

The Article eight requires the EU and member states to play a more active and significant role in governing international environmental issues and cooperate increasingly with international environmental organizations.⁵⁴ These words in the EU’s first EAP contained its concern to the international environmental cooperation. In 1979, the EU took its first attempt to get access to the global environmental politics by signing the Convention on Long-range Transboundary Air Pollution. In this convention, due to the insistence of the EU, a clause which ruled that “regional economic integration organizations” are also eligible to put signature was accepted by both of the East and

50 *Ibid.* p. 2.

51 *Ibid.* p. 2.

52 John Vogler, The External Environmental Policy of the European Union, *Yearbook of international cooperation on environment and development*, 2003/2004, pp. 65–71.

53 Declaration of the Council of the European Communities and of the Representatives of the Governments of the Member States Meeting in the Council of 22 November 1973 on the Programme of Action of the European Communities on the Environment, *Official Journal of the European Communities*, Vol. 16, 20 December 1973, No C 112/6, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:1973:112:FULL&from=EN>.

54 *Ibid.* No C 112/6–7.

West camps.⁵⁵

Along with the formation and evolution of the EU's environmental policy, its foreign environmental policy also achieved a major progress. As early as the SEA, when a single environmental policy was granted with its legal basis, the EU and member states have been required to cooperate with third countries and relevant international organizations.⁵⁶ This requirement was kept in the TEU. Moreover, the TEU gave the EU competence to conclude international environmental agreements, which was once enjoyed by the Union's institutions and its larger member states, such as France and Germany.⁵⁷ In addition, the TEU included a number of policy objectives on international cooperation, and thus, "reflected an increased awareness both of the pressing and serious threat posed by global issues, and also of the Community's particular responsibility as a world economic power actively to address them."⁵⁸

Another progress that the EU made after the TEU was the opening of the Dublin European Council meeting in June 1990, at which an Environmental Imperative was adopted and annexed to the Conclusions of the Presidency. In the Environmental Imperative, the heads of the EU and member states recognized their "special responsibility to encourage and participate in international action to combat global environmental problems."⁵⁹ The Community was required to "use more effectively its position of moral, economic and political authority to advance international efforts to solve global problems and to promote sustainable development and respect for the global commons."⁶⁰ In April 1997, the European Council released the Council Regulation on Environmental Measures in Developing Countries in the Context of Sustainable Development. In this document, a number of principles and technical details

55 The 1979 Geneva Convention on Long-range Transboundary Air Pollution, Article 14, See: <https://www.unece.org/fileadmin/DAM/env/lrtap/full%20text/1979.CLRTAP.e.pdf>; Ludwig Krämer, *The Roots of Divergence: A European Perspective*, in Norman Vig and Michael Faure (eds.), *Green Giants? Environmental Policies of the United States and the European Union*, The MIT Press, 2004, p. 59.

56 Article 130r (5) under the Title VII, Single European Act, *Official Journal of the European Communities*, 29. 6. 87, p. 12, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:11986U/TXT&from=EN>.

57 Ludwig Krämer, *The Roots of Divergence: A European Perspective*, in Norman Vig and Michael Faure (eds.), *Green Giants? Environmental Policies of the United States and the European Union*, The MIT Press, 2004, p. 58.

58 Peter Kunzlik, *Environmental Policy*, Longman Information & Reference, 1994, p. 24.

59 The Environmental Imperative Declaration by the European Council, 1990, p. 22, See: http://www.europarl.europa.eu/summits/dublin/du2_en.pdf.

60 *Ibid.* p. 22.

on various issues were outlined, such as the form of support, eligibility of projects, and activities to be supported. By doing so, it provided “a framework for the Community to support developing countries’ environmental measures.”⁶¹

After reviewing the EU’s external environmental policy reflected in its major documents, a key question is asked: “How does the EU implement its external environmental policy?” As analyzed by Wang Mingjin, the EU has been implementing its external environmental policy through three ways. First, the EU has been promoting the establishment of global environmental institutions by utilizing its diplomatic ability. These activities include, 1) signing multilateral environmental conventions; By 2008, the EU has already been a party or a signatory of more than 60 multilateral environmental agreements;⁶² 2) supporting and participating the activities of international environmental organizations; 3) acting as a coordinator and promoter in global environmental governance. Second, the EU has been promoting the global environmental cooperation by taking economic measures. As observed by Wang, the EU has taken its neighbors, including the Eastern Europe and Mediterranean region as the main cooperation partners, and then the rest of world, particularly the developing world, including China. Third, the EU has committed to improve its environmental law system and build a solid environmental trade barrier. By doing this, on one hand the EU can claim an advantage in global trade, on the other hand, it can force other players to enhance their environmental standards.⁶³ In addition to Wang’s analysis, John Vogler outlines two ways that the EU takes to get involved in the global environmental governance: 1) the formal involvement in the network of international environmental institutions (which is the first and most evident way), and 2) the informal involvement, including “through the dissemination of its norms and standards and through the incorporation of outsiders,” through “the integration of a range of policy areas including

61 Council Regulation (EC) No 722/97 of 22 April 1997 on environmental measures in developing countries in the context of sustainable development, *Official Journal of the European Communities*, 25. 4. 97, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31997R0722&from=EN>; Environmental measures for sustainable development in developing countries, See: http://cordis.europa.eu/news/rcn/8200_en.html.

62 Chad Damro, Iain Hardie and Donald MacKenzie, The EU and Climate Change Policy: Law, Politics and Prominence at Different Levels, *Journal of Contemporary European Research*, Vol. 4, Iss. 3, 2008, p. 184. A list of international environmental agreements that the EU is a contracting party or a signatory, please refer to: http://ec.europa.eu/environment/international_issues/pdf/agreements_en.pdf, January 2016.

63 Wang Mingjin, 浅析欧盟对外环境政策及其实践 (Qianxi Oumeng Duiwai Huanjing Zhengce Jiqi Shijian; The EU’s External Environmental Policy and Its Practice), *欧洲研究 (Ouzhou Yanjiu; Chinese Journal of European Studies)*, No. 5, 2008, pp. 33–46.

trade and development that are critical to the achievement of sustainability”, and through “implementation.”⁶⁴

A brief review of the EU's environmental policy has demonstrated that the EU does not only strongly concern its own environmental issues, but also commits to assist the developing countries in environmental governance. And, it should be noted here that it is the internal development that helped reinforce the external dimension of the EU's environmental policy. “The EU's ability to act in its own right as an environmental actor is a by-product of the historical evolution of complex institutional forces. Just as the EU was expanding its environmental policy scope, it was also enhancing enormously its international profile.”⁶⁵ This enhancement of international profile finally resulted in the EU's leadership in global environmental politics.

3. The EU's Leadership in Global Environmental Governance

Today, the EU's leading role in global environmental governance is widely recognized, not only by the EU itself but also the international community. Due to the significance of climate change in global environmental politics, and the grave threat of climate change to the survival of human being, it is the field that best examines the EU's leadership in global environmental politics. Therefore, I use climate change to analyze the EU's leadership in this section. But, before discussing the evolution of the EU's leadership and the ways that the EU leads in global environmental governance, the conception of “leadership” should be understood first.

According to Grubb and Gupta, there are three types of leadership: structural leadership, instrumental leadership, and directional leadership. Put it simply, the structural leadership is built on a state's material and political resources. In the climate change field, it means that the more one country emits, the more potential leadership it enjoys in fighting against climate change. The instrumental leadership underlines the state's

64 John Vogler, The European contribution to global environmental governance, *International Affairs*, Vol. 81, Iss. 4, 2005, p. 836.

65 Anthony Zito, The European Union as an Environmental Leader in a Global Environment, *Globalizations*, Vol. 2, No. 3, 2005, p. 367.

political skill. In the climate change field, it requires the leader to have the ability to find common grounds for the actors and lead them to the common ends, despite the existence of various conflicts. The directional leadership highlights the leader's role as a good example. Specifically in the climate change politics, it means that the leader must be a forerunner in the efforts of carbon reduction.⁶⁶ To the EU, although it has been enjoying all three types of leaderships, its instrumental leadership has been "erratic," while its structural leadership has been "occasional." Its leadership has been largely directional and demonstrated by setting itself as a good example of carbon reduction.⁶⁷

As the world's largest economy and the first industrialized region, the EU's highly developed economy generates enormous carbon emission and is one of the major contributors to global warming. Although the EU has achieved great progress in reducing carbon emission, it is still one of the major emitters (only after China and the US), particularly from a long-term historical point of view.⁶⁸ But, it is notable that the EU's leadership in the global efforts to tackle environmental challenges was once enjoyed by the US, rather than the EU, particularly during the drafting of the Montreal Protocol on Substances that Deplete the Ozone Layer and the first few years of climate change negotiations.

The EU has been paying attention to climate change as early as 1986,⁶⁹ although most attention was spared to the scientific aspect then. It took a step forward in dealing with climate change in 1990, when the EU set a target to limit its carbon dioxide (CO₂)

66 Bertil Kilian and Ole Elgström, Still a green leader? The European Union's role in international climate negotiations, *Cooperation and Conflict*, Vol. 45, No. 3, 2010, pp. 255–273; Joyeeta Gupta and Lasse Ringius, The EU's Climate Leadership: Reconciling Ambition and Reality, *International Environmental Agreements: Politics, Law and Economics*, Vol. 1, No. 2, 2001, pp. 281–299. As a reference, one might be interested that an analysis of four types of leadership is provided by Rüdiger Wurzel and James Connelly, which are: structural leadership, entrepreneurial leadership, cognitive leadership and symbolic leadership. See: Rüdiger Wurzel and James Connelly, Introduction: European Union political leadership in international climate change politics, in Rüdiger Wurzel and James Connelly (eds.), *The European Union as a Leader in International Climate Change Politics*, London and New York, NY: Routledge, 2011, p. 13.

67 Bertil Kilian and Ole Elgström, Still a green leader? The European Union's role in international climate negotiations, *Cooperation and Conflict*, Vol. 45, No. 3, 2010, pp. 255–273.

68 Mengpin Ge, Johannes Friedrich and Thomas Damassa, *6 Graphs Explain the World's Top 10 Emitters*, World Resource Institute, November 25, 2014, See: <https://wri.org/blog/2014/11/6-graphs-explain-world's-top-10-emitters>.

69 Jergen Wettstad, The complicated development of EU climate policy: Lessons learnt, in Joyeeta Gupta and Michael Grubb (eds.) *Climate Change and European Leadership: A Sustainable Role for Europe?*, Springer Science & Business Media, 2000, p. 27.

emission and decided to stabilize its CO₂ emission at 1990 levels by 2000.⁷⁰ Also in 1990, the EU recognized the significance of environment in world politics and officially expressed its ambition to become a leader in environmental governance, including in resisting global warming.⁷¹ In the Environmental Imperative, which is a part of the 1990 Dublin Declaration, the EU declares that:

*There is also an increasing acceptance of a wider responsibility, as one of the foremost regional groupings in the world, to play a leading role in promoting concerted and effective action at global level. ... The Community and its Member States have a special responsibility to encourage and participate in international action to combat global environmental problems. Their capacity to provide leadership in this sphere is enormous.*⁷²

In addition, the EU committed that “the Community and its Member States will take all possible steps to promote the early adoption of a Climate Convention and associated protocols.”⁷³ It also urged all countries to take measures to limit emissions of greenhouse gas (GHG) emissions. Since then, the EU has been increasingly involved in climate change governance and established its leading role in this sphere.

3.1 Phase I: 1990–1996

This first phase of the evolution of the EU's climate change policy ranges from 1990 to 1996, when the EU was playing second fiddle in climate change politics. Although now the EU declares itself as the leader of global environmental politics and is also widely accepted as a leader in this field, the coming into existence of EU's leading role could hardly have been predicted.⁷⁴ Its leadership was first realized by the international community in 1990, when (as mentioned earlier) a joint energy and environment council was organized and a stabilization target was agreed. This happened only a few

70 *Ibid.* See also, Rüdiger Wurzel and James Connelly, Introduction: European Union political leadership in international climate change politics, in Rüdiger Wurzel and James Connelly (eds.), *The European Union as a Leader in International Climate Change Politics*, London and New York, NY: Routledge, 2011, p. 5.

71 Bertil Kilian and Ole Elgström, Still a green leader? The European Union's role in international climate negotiations, *Cooperation and Conflict*, Vol. 45, No. 3, 2010, pp. 255–273.

72 The Environmental Imperative Declaration by the European Council, 1990, p. 20, See: http://www.europarl.europa.eu/summits/dublin/du2_en.pdf.

73 *Ibid.* p. 22.

74 John Vogler, The European contribution to global environmental governance, *International Affairs*, Vol. 81, Iss. 4, 2005, pp. 835–850.

months before the establishment of the Intergovernmental Negotiating Committee by the UN General Assembly in December 1990. Therefore, the announcement of its stabilization target “gave the Intergovernmental Negotiating Committee negotiations high level political momentum and provided a steer for other industrialized countries to combat climate change.”⁷⁵ Also, in a series of negotiations for the Kyoto Protocol, the EU promised the most ambitious carbon reduction target—eight percent (from the 1990 level) to 2008–2012 and spread high pressure to other major emitters, such as the US and Japan. However, during the following few years after the initiation of the international climate change regime, it was the US that played the leading role. Meanwhile, the EU was suffering the lack of an internal consensus on climate change and was not able to speak in one voice—let alone a common climate change policy.⁷⁶

3.2 Phase II: 1997–2009

The establishment of the EU’s leadership in climate change politics in this phase is a result of both internal and external factors. From the internal perspective, the EU had been elevating the position of climate change in its internal affairs and taking more measures to combat climate change. For example, the EU launched its first European Climate Change Programme in June 2000 (and the second in 2005) in order to develop a strategy to achieve the eight percent reduction target in GHG emissions for the 2008–2012 period. In 2002, the EU issued its sixth EAP, in which climate change was listed as the number one priority area for action.⁷⁷ In 2007, a milestone in evolution of the EU’s climate change policy was recorded, as the EU introduced the “climate and energy package” (or the “20–20–20 targets”). It requires the EU to cut its GHG emissions by 20 percent from 1990 levels by 2020, increase the percentage of renewable energy in the EU energy mix to 20 percent by 2020, and enhance its energy efficiency by 20 percent by 2020.⁷⁸ The significance of this package is that, as commented by the then Commissioner for Environment—Stavros Dimas,

75 Farhana Yamin, The role of the EU in climate negotiations, in Joyeeta Gupta and Michael Grubb (eds.), *Climate Change and European Leadership: A Sustainable Role for Europe?*, Springer Science & Business Media, 2000, pp. 48–49.

76 Diarmuid Torney, *European climate diplomacy: Building capacity for external action*, The Finnish Institute of International Affairs (FIIA), Briefing Paper 141, October 2013.

77 *Sixth Environment Action Programme*, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=URISERV:128027&from=RO>.

78 *Climate Action-2020 climate & energy package*, See: http://ec.europa.eu/clima/policies/strategies/2020/index_en.htm, last update: 20/03/2017.

Building on Europe's pioneering emissions trading system, this package demonstrates to our global partners that strong action to fight climate change is compatible with continued economic growth and prosperity. It gives Europe a head start in the race to create a low-carbon global economy that will unleash a wave of innovation and create new jobs in clean technologies.⁷⁹

From the external perspective, the EU's leadership was finally confirmed during the negotiations for the Kyoto Protocol. Although committed the largest reduction of carbon emission during the negotiations and thus primarily demonstrated its leadership potential, the establishment of the EU's leading role in climate change could never be possible without the retreat of the US. The policymakers in the US took a negative attitude to Kyoto Protocol. In their opinion, "the Kyoto Protocol is an unworkable agreement that would impose unacceptable costs on the US economy while exempting developing countries from taking action."⁸⁰ For them, "the best way to deal with climate change is through additional scientific research and long-term support of technological change,"⁸¹ instead of drafting a protocol. The reluctance to and the final withdrawal from the Kyoto Protocol offered an opportunity to the EU to take over the leadership from the US. The EU did not waste it and finally put the Protocol into practice.

3.3 Phase III: 2010–Present

The third phase of the evolution of EU's climate change policy begins from 2010, more exactly after the COP 15 in December 2009. At the Copenhagen Conference, the EU's leadership on climate change was seriously challenged. The two biggest GHG emitters (China and the US) refused to recognize the EU's leadership. The US was ready to challenge the EU's leadership, while China turned to the US for leadership, rather than the EU. This resulted in the leadership in Copenhagen extremely fragmented and shared by the EU, the US and China/G77.⁸² For the EU, the failure of reaching a binding

79 *Boosting Growth and Jobs by Meeting Our Climate Change Commitments*, Press Release IP/08/80, Brussels, 23 January 2008, Commission of the European Communities, See: http://europa.eu/rapid/press-release_IP-08-80_en.htm, last update: 24/01/2017.

80 Miranda Schreurs, *The Climate Change Divide: The European Union, the United States, and the Future of the Kyoto Protocol*, in Norman Vig and Michael Faure (eds.), *Green Giants? Environmental Policies of the United States and the European Union*, MIT press, 2004, p. 208.

81 *Ibid.* p. 208.

82 Charles Parker, Christer Karlsson and Mattias Hjerpe et al, *Fragmented climate change leadership:*

reduction target is “a huge disappointment.”⁸³ From the failure, it learned that “as a medium-sized power in climate politics as compared to the two biggest emitters, the US and China, it cannot determine the agenda or the outcome,”⁸⁴ therefore, the EU must position itself “as a bridge-builder between the major blocs trying to tilt the balance as much as possible in favor of its own overall objectives.”⁸⁵ Based on the recognition of its new role, which is described as a “leadator” (leader-cum-mediator), it successfully reclaimed its leadership to a certain extent in Cancun in 2010 and Durban in 2011.⁸⁶

Although viewed as a failure, the efforts of Copenhagen were not in vain, and actually helped the success of the Paris Conference held in 2015.⁸⁷ The Paris Conference was convened on 30th November 2015, attracted 150 world leaders, along with 40,000 delegates from 195 countries. It is viewed as “the most beautiful and the most peaceful revolution ... for climate change” by the French President Francois Hollande.⁸⁸ After a two-week negotiation, the Paris Agreement on Climate Change was agreed. For the first time, the Paris Agreement “brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so.”⁸⁹ The central aim of the Paris Agreement is to “strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below two degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further

making sense of the ambiguous outcome of COP-15, *Environmental Politics*, Vol. 21, Iss. 2, 2012, pp. 268–286. G77, or Group 77, is a loose coalition of developing countries founded in 1964. It has more than 130 members now.

83 Christer Karlsson, Charles Parker and Mattias Hjerpe et.al, Looking for Leaders: Perceptions of Climate Change Leadership among Climate Change Negotiation Participants, *Global Environmental Politics*, Vol. 11, No. 1, 2011, p. 94.

84 Sebastian Oberthür, Global Climate Governance after Cancun: Options for EU Leadership, *The International Spectator*, Vol. 46, No. 1, 2011, p. 10.

85 *Ibid.* p.10.

86 *Ibid.* pp. 5–13; See also, Karin Bäckstrand and Ole Elgström, The EU’s role in climate change negotiations: from leader to ‘leadator’, *Journal of European Public Policy*, Vol. 20, Iss. 10, 2013, pp. 1369–1386.

87 Robert Falkner, The Paris Agreement and the new logic of international climate politics, *International Affairs*, Vol. 92, Iss. 5, 2016, pp. 1107–1125; Charlotte Streck, Paul Keenlyside and Moritz von Unger, The Paris Agreement: A New Beginning, *Journal for European Environmental & Planning Law*, Vol. 13, Iss. 1, 2016, p. 25.

88 Tom Bawden, COP21: Paris climate deal ‘our best chance to save the planet’, says Obama, *INDEPENDENT*, 12 December 2015, See: <http://www.independent.co.uk/environment/cop21-ministers-keep-the-world-waiting-for-ratification-of-historic-climate-change-target-a6770821.html>.

89 UNFCCC-Paris Agreement, See: http://unfccc.int/paris_agreement/items/9485.php.

to 1.5 degrees Celsius.”⁹⁰ It entered into force in November 2016, and had been ratified by over 140 parties by April 2017.

The outcome of the COP 21 is beyond expectation,⁹¹ and highly hailed by parties. The EU takes Paris Agreement as “the first-ever truly global climate deal.”⁹² At the conference, the EU continued its tactics of playing as “lead-actor” learned from the failure of COP 15.⁹³ During and before that conference, the EU displayed a high level of diplomatic activity both inside the UNFCCC and beyond, engaged in coalition building in order to enhance the weight of its demands and in bridge-building to broker and influence the outcome. In Paris, the EU consolidated its “lead-actor” role in international climate policy.⁹⁴ Although, only enjoyed a 41 percent recognition of leadership in Paris (as a comparison, this figure was 46 percent at the COP15 meeting),⁹⁵ with favorable external conditions surrounding the Paris Conference, the outcome of the Paris Conference was made a relative success for the EU.⁹⁶

In this chapter, following the clues of the key documents in the history of the EU and the seven EAPs, I briefly discussed the evolution of the EU’s environmental policy and its external dimension. Also, taking climate change as a case, I analyzed the EU’s leadership in global environmental governance. I divided the evolution of EU’s environmental policy into four phases: 1957–1972, 1973–1986, 1987–1992 and 1993–present. These phases witness the growth of EU’s environmental policy from infancy (a few measures but without solid legal regulations) to the final formation. In parallel, an external dimension of EU’s environmental policy is developed and indicates its inherent external concern to global environmental issues. This external dimension provides the

90 *Ibid.*

91 Summary of the Paris Climate Change Conference, Earth Negotiations Bulletin, Vol. 12, No. 663, 2015, See: <http://enb.iisd.org/vol12/enb12663e.html>.

92 *Historic climate deal in Paris: speech by Commissioner Miguel Arias Cañete at the press conference on the results of COP 21 climate conference in Paris*, Brussels, 14 December 2015, See: http://europa.eu/rapid/press-release_SPEECH-15-6320_en.htm.

93 Sebastian Oberthür and Lisanne Groen, The European Union and the Paris Agreement: leader, mediator, or bystander? *WIREs Climate Change*, Vol. 8, Iss. 1, 2016.

94 *Ibid.*

95 Charles Parker, Christer Karlsson and Mattias Hjerpe, Assessing the European Union’s global climate change leadership: from Copenhagen to the Paris Agreement, *Journal of European Integration*, Vol. 39, Iss. 2, 2017, pp. 239–252.

96 Sebastian Oberthür and Lisanne Groen, The European Union and the Paris Agreement: leader, mediator, or bystander? *WIREs Climate Change*, Vol. 8, Iss. 1, 2016.

EU with a policy foundation for its engagement with global environmental governance and thus the leading role.

From the very beginning of the evolution of the EU's environmental policy, it has been showing an apparent external dimension. The EU's concerns on international environmental governance lies at three levels which extend from its geographically close neighbors to Eastern Europe and the former Soviet area, and finally to the rest of the world, particular the third world. This expansion is driven by three factors. The first factor roots in the nature of environmental issues. Years after recognizing the traditional environmental issues (such as water and air pollution, acid rain), more global environmental issues were identified (such as the protection of ozone layer and climate change). To deal with these issues, the EU needs not only cooperate with a few countries nearby, but also the rest of the world, particularly those environmentally big players. Therefore, the EU has to broaden its horizon and make its environmental policy more global. The second factor relates to the rise of environment on global political agenda. Represented by climate change, environment gradually became a new hot topic in world politics around the 1990s. The EU is militarily weak due to its special political status, which limits it to play an assertive role in global politics. Therefore, it has to exploit other opportunities to expand its global influence. The EU recognizes environment as an ideal option and proactively seeks a leadership in this area. The third factor concerns the economic potential of eco-industry. The eco-industry is viewed as a new engine for economic growth. Different from other industries, the eco-industry can achieve the economic results with less consumption of resources and less production of wastes. The fundamental way to govern the environment is greening the industry. The EU as a forerunner in eco-industry can benefit substantially from exporting green products and technologies. And to do so, it needs to seek potential markets.

Chapter IV. China's Environmental Policy and Diplomacy

As early as the few years before 1972, China's interaction with the international community increased and took its first actions in environmental diplomacy.¹ In 1972, China sent its delegation to Stockholm to attend the UNCHE. The conference served as an eye-opener to the Chinese authorities,² and marked both the inauguration of China's domestic environmental policymaking and its environmental diplomacy.

In the past over four decades since 1972, China's environmental policy, diplomacy, and its role in global environmental politics have evolved dramatically. In this chapter, I discuss China's environmental policy, diplomacy, and its role in global environmental politics in three respective sections. The first section is the discussion on China's environmental policy. By learning from the studies of other researchers and paying close attention to the most recent developments of China's environmental policy, I analyze the evolution of China's environmental policy in four phases: 1972–1978, 1979–2002, 2003–2012, and 2013–present. In section two, I divide the evolution of China's environmental diplomacy into three phases: 1972–1990, 1991–2008, and 2009–present. This analysis reflects the evolution of China's attitude towards international environmental politics: from a cautious participant to an active one, and finally to a proactive player. In the discussion of the third phase of China's diplomacy, I use climate change to demonstrate that China has been behaving more proactively in global environmental governance. Following this discussion, I take a step forward in the third section, and analyze China's specific roles and motives in climate change politics.

1 Cai Shouqiu and Mark Voigts, The development of China's environmental diplomacy, *Pacific Rim Law & Policy Journal*, Vol. 3, 1993, pp. 17–42.

2 Heggelund, Gørild and Ellen Bruzelius Backer, China and UN Environmental Policy: Institutional Growth, Learning and Implementation, *International Environmental Agreements*, Vol. 7, No. 4, 2007, pp. 415–438.

1. The Evolution of China's Environmental Policy

The publication of the renowned “Silent Spring” soon incurred hot debates in western world and enlightened people’s awareness of environmental protection. This awareness spilled into the political field and finally resulted in the opening of 1972 UNCHE in Stockholm, which initiated China’s long march of environmental protection.

China’s environmental policy, as observed by Bao Maohong, “was transformed from an administrative instrument first to a legal system and second to the integration of economic instruments within the legal system.” It was “in harmony with the historical trends that China was experiencing as it transformed from the socialist planned economy to a socialist market economy.”¹ Building on previous studies, I divide the evolution of China’s environmental policy into four phases: 1972–1978 (when environment began to go into the eyesight of Chinese leaders), 1979–2002 (when environment was taken as a secondary topic), 2003–2012 (when environment began to climb rapidly on China’s political agenda), 2013–present (when environmental protection becomes a priority of Chinese affairs and an environmental policy framework emerges).

1.1 Phase I: 1972–1978

The first few years after the UNCHE are the initiation phase of China’s environmental protection. In these several years, some progresses were made, but with little practical effect. In 1972, China was invited to attend the UNCHE, and thanks to this conference, China recognized environmental protection as an issue that it should address. Therefore, an interesting fact in the case of China is that its involvement in environmental diplomacy is earlier than its domestic environmental policymaking. Although the year of 1972 is widely recognized as the beginning of China’s environmental protection, environment had already been a concern for Chinese leaders, particularly Zhou Enlai—the then Chinese Premier, before the UNCHE.

Premier Zhou, who is regarded as the initiator and founder (开创者和奠基者

¹ Bao Maohong, The evolution of environmental policy and its impact in the People’s Republic of China, *Conservation and Society*, Vol. 4, No. 1, 2006, p. 37.

Kaichuang Zhe he Dianji Zhe) of China's environmental protection,² realized the significance of environmental protection as early as a few years before the UNCHE. In various occasions, he reminded his ministers not to underestimate the significance of environmental protection and called on them to attach importance of this issue. In December 1970, Zhou met a Japanese delegation with a journalist member worked on environmental protection. He invited that journalist to give a lecture to his ministers, and requested those Chinese ministers to report to him after the lecture. In March 1972, an environmental accident of Guanting Reservoir which was a major water supply of Beijing and producer of water products was reported. Zhou attached great importance to this accident and required to establish a leading group and an office to tackle this issue. At a conference on governing the "three wastes" (三废 Sanfei—waste gas, waste water, and waste residues) issue, attended by major leaders from all Chinese provinces, Zhou encouraged them to fight against environmental pollution. He said that, "the capitalist countries failed to solve the industrial pollution issue because of their private ownership, anarchy of production, and pursuit of more profits. We can contain the industrial pollution, because we apply socialist planning economy and severe the people."³ As calculated by Qu Geping, 31 speeches on environment by Zhou were recorded from 1970 to 1974.⁴

Thanks to Zhou's efforts, China's first National Conference on Environmental Protection was convened in August 1973. Although China was still suffering in the whirlpool of Cultural Revolution, some achievements on environmental protection were still made. That conference officially recognized the seriousness of China's environmental pollution for the first time, established a number of guiding principles on China's environmental protection, which were "plan comprehensively, distribute rationally, use synthetically, turn harm to benefit, depend on the masses, everybody

2 Qu Geping, 新中国环境保护工作的开创者和奠基者——周恩来 (Xin Zhongguo Huanjing Baohu Gongzuo de Kaichuangzhe he Dianjizhe—Zhou Enlai; The Initiator and Founder of China's Environmental Protection—Zhou Enlai), *党的文献* (*Dang de Wenxian; Literature of Chinese Communist Party*), Iss. 2, 2000, pp. 84–88.

3 He Libo, 周恩来为新中国环保事业奠基 (Zhou Enlai Wei Xinzhongguo Huanbao Shiye Dianji, Zhou Enlai Laid the Foundation for China's Environmental Protection), 09/06/2010, See: <http://dangshi.people.com.cn/GB/85038/11827334.html>.

4 Qu Geping, 新中国环境保护工作的开创者和奠基者——周恩来 (Xin Zhongguo Huanjing Baohu Gongzuo de Kaichuangzhe he Dianjizhe—Zhou Enlai; The Initiator and Founder of China's Environmental Protection—Zhou Enlai), *党的文献* (*Dang de Wenxian; Literature of Chinese Communist Party*), Iss. 2, 2000, pp. 84–88.

starts work, protect environment, bring benefit to people” (全面规划,合理布局,综合利用,化害为利,依靠群众,大家动手,保护环境,造福人民; QuanMian Guihua, Heli Buju, Zonghe Liyong, Huahai Weili, Yikao Qunzhong, Dajia Dongshou, Baohu Huanjing, Zaofu Renmin).⁵ In addition, China’s first document on environmental protection—“Some Regulations on Protecting and Improving the Environment” was passed at that conference. In this document, the so-called “Three Simultaneities” (三同时 San Tongshi) system was established. It requires that the installations for the prevention and control of pollution at a construction project must be designed, built, and commissioned together with the principal part of the project. This regulation was then enclosed into China’s 1979 Environmental Protection Law (Trial) and has been insisted since then. After the conference, China’s first environmental agency—a leading group on environmental protection under the supervision of the State Council was organized.

1.2 Phase II: 1979–2002

The third Plenary Session of the 11th Central Committee of the CPC in December 1978 pulled China out of the brutal political unrest, and China commenced to implement the reform and opening up policy. Environmental protection also benefited from the alternation of Chinese leaders, and began to make remarkable progress. This phase witnessed a great step forward in China’s environmental protection, during when the foundation of China’s contemporary environmental protection system was built.

One month before China decided to commit domestic reform and open its door in November 1978, environment had already attracted the attention of Chinese leaders. In that month, China decided to launch the “Three-north Forest Shelter Program” (三北防护林 Sanbei Fanghulin) to build a green Great Wall in the northern and north western China. Also in November, an order was issued to 167 China’s largest industrial polluters. These enterprises, most of which were in metallurgical, petroleum, coal, chemical, and building material industries, were ordered to install pollution controls or recycling processes by 1982 at the latest and threatened to be shut down if the order was not well obeyed.⁶

⁵ English Translation learned from: Bao Maohong, The evolution of environmental policy and its impact in the People’s Republic of China, *Conservation and Society*, Vol. 4, No. 1, 2006, pp. 36–54.

⁶ “Order for Control of Environmental Pollution,” *Peking Review*, 21:46 (November 24, 1978), p. 31,

In addition to these environmental protection measures, the most notable progress achieved during this phase is the legislation of environmental laws and the establishment of environmental authorities. In China's first Constitution Law (1978) after Cultural Revolution, an article was inserted which states that "the state protects the environment and natural resources, and prevents and controls pollution and other public hazards."⁷ Based on this regulation, the SCNPC issued the Environmental Protection Law (Trial) in 1979. In 1982, China adopted a new Constitution Law, in which the content on environmental protection was enriched as "the State protects and improves the environment in which people live and the ecological environment. It prevents and controls pollution and other public hazards."⁸

In 1983, "environmental protection" joined one-child policy, resource conservation, and opening up, became one of China's "fundamental state policies" (基本国策 Jiben Guo策) at the Second National Conference on Environmental Protection. In addition, this conference formulated the guiding principles of "simultaneous planning, simultaneous implementation and simultaneous development for economic construction, urban and rural construction and environmental construction, and combining the economic returns with social effects and environmental benefits." It also confirmed the three major policies for environmental protection: "prevention first and combining prevention with control," "making the causer of pollution responsible for treating it," and "intensifying environmental management" (预防为主, 防治结合; 谁污染, 谁治理; 强化环境管理; Yufang Weizhu, Fangzhi Jiehe; Shui Wuran, Shui Zhili; Qianghua Huanjing Guanli).⁹ In 1989, the SCNPC released the Environmental Protection Law. During this process, other special laws concerning specific environmental issues were

cited from: Vaclav Smil, Environmental Degradation in China, *Asian Survey*, Vol. 20, No. 8, 1980, pp. 777-788.

7 中华人民共和国宪法 (1978 年) (*Zhonghua Renmin Gongheguo Xianfa; Constitution of the People's Republic of China*, (Adopted on March 5, 1978), Article 11, See: http://www.npc.gov.cn/wxzl/wxzl/2000-12/06/content_4365.htm.

8 Constitution of the People's Republic of China, (Adopted on 4 December 1982), Article 26, See: http://www.npc.gov.cn/englishnpc/Constitution/2007-11/14/content_1372953.htm.

9 National Bureau of Statistics of China, 改革开放 30 年报告之十五: 环境保护事业取得积极进展 (Gaige Kaifang 30nian Baogao zhi Shiwu: Huanjing Baohu Shiye Qude Jiji Jinzhan; The Report (15th) for the 30-year Reform and Opening Up: Positive Progress is Achieved in Environmental Protection), 14/11/2008, See: http://www.stats.gov.cn/ztc/ztc/ztc/jnggkf30n/200811/t20081114_65701.html. English translation learned from: Information Office of the State Council of the People's Republic of China, Environmental Protection in China, *Xinhuanet*, June 1996, Beijing, See: http://news.xinhuanet.com/zhengfu/2002-11/18/content_633191.htm.

also enacted, such as the Marine Environmental Protection Law (1982), Law on the Prevention and Control of Water Pollution (1984), Forestry Law (1984) and Law on Prevention of Environmental Pollution Caused by Solid Waste (1995).

While endeavoring to build an environmental law system, China was also struggling to construct its environmental protection bureaucratic system. In 1982, the Bureau of Environmental Protection was established and finally lifted to the State Environmental Protection Administration in 1998, after experiencing two lifts in 1984 and 1988 respectively.¹⁰ In addition, the Environmental Protection Committee of the State Council was organized in 1984 to coordinate environmental protection actions among ministries. In 1993, the Environment and Resources Protection Committee was established under the supervision of the National People's Congress. With the rise of China's environmental protection authorities in China's bureaucratic system, its body expanded dramatically. By 1995, there were only over 2,500 environmental protection administration departments nationwide with a total staff of around 88,000 engaged in environmental administration, monitoring, inspection and control, statistics collection, scientific research, publicity and education.¹¹ In ten years, the number of environmental protection administration departments increased to 3,226, while the number of staff working on environmental protection increased to 167,000, among which, over 50,000 staff were working in 3,854 environmental supervision and law-enforcement organs.¹²

While China was taking efforts domestically, it was also paying close attention to the international environmental movements. As was demonstrated in 1972, when China attended the UNCHE and commenced to commit to environmental protection, "China's domestic environmental awakening bears a close relationship with its international environmental diplomacy, which in turn has a close tie with its UN diplomacy."¹³ The

10 Zhang Shiqiu, 国家环保部: 从机构升格到职能强化 (Guojia Huanbaobu: Cong Jigou Shengge dao Zhineng Qianghua, The Ministry of Environmental Protection: from institutional upgrade to functional strengthen), *China.com.cn*, 08/05/2009, See: http://www.china.com.cn/news/zhuanti/hblps/2009-05/08/content_17745809.htm.

11 Information Office of the State Council of the People's Republic of China, Environmental Protection in China, *Xinhuanet*, June 1996, Beijing, See: http://news.xinhuanet.com/zhengfu/2002-11/18/content_633191.htm.

12 Information Office of the State Council of the People's Republic of China, Environmental Protection in China (1996–2005), June 2006, Beijing, See: <http://www.china.org.cn/english/MATERIAL/170257.htm>.

13 Gerald Chan, China's compliance in global environmental affairs, *Asia Pacific Viewpoint*, Vol. 45, No. 1, 2004, p. 78.

1992 UNCED raised a new wave of environmental protection worldwide. China participated in that conference and introduced some new ideas to its environmental protection. Soon after that conference, China released “China’s Ten Strategic Policies on Environment and Development and National Agenda 21—White Paper on China’s Population, Environment and Development in the 21st Century.” The release of this document “marks the beginning of the sustainable development process in China and exerts a far reaching influence on the country’s social and economic development.”¹⁴ China declares itself as one of the first few countries to propose and implement sustainable development strategies.¹⁵ After then, environment began to be integrated into China’s national development plans. In China’s ninth five-year plan (FYP), which covered the phase from 1996 to 2000, sustainable development was introduced for the first time.¹⁶ In the following 10th FYP (2001–2005), environmental protection targets were enclosed.¹⁷

A less prominent, but not less significant progress made during this period is the rapid rise of environmental nongovernmental organizations (ENGOS). In 1994, China’s first ENGO—Friends of Nature (自然之友 Ziran Zhi You) was registered. Initiated by Liang Congjie and his colleagues in Beijing, Friends of Nature is now an organization with over 10,000 volunteers and 14 local member groups over China. Its main mission is to “promote public awareness of environmental issues and create platforms for public participation in environmental decision-making.”¹⁸ The establishment of Friends of Nature mirrors the awake of Chinese citizens’ awareness of environmental protection, and the change of the attitude of Chinese government towards the ENGOS. With the rise of the ENGOS and thus the beginning of public participation in environmental protection, a fourth party (in addition to government, enterprises, and international cooperation) had risen. According to an investigation conducted in 2005, 2,768

14 Ying Shen, Environmental Policies Concerning Climate Change in China: A Contemporary and Holistic View, *Environmental Law Reporter*, Vol. 43, No. 12, 2013, p. 11088.

15 Permanent Mission of the People’s Republic of China to the UN, *China’s National Report on Sustainable Development*, 08/06/2012, See: <http://www.china-un.org/eng/zt/sdrengr/>.

16 Richard Edmonds, The evolution of environmental policy in the People’s Republic of China, *Journal of Current Chinese Affairs*, Vol. 40, Iss. 3, 2011, pp. 13–35; and Carlos Wing-hung Lo and Sai-Wing Leung, Environmental Protection and Popular Environmental Consciousness in China, in Joseph Cheng (ed.), *China Review*, Hong Kong: Chinese University Press, 1998, p. 502.

17 Gerald Chan, China’s compliance in global environmental affairs, *Asia Pacific Viewpoint*, Vol. 45, No. 1, 2004, pp. 69–86.

18 Friends of Nature, *About FON*, 01/02/2012, See: <http://www.fon.org.cn/index.php/en/post/id/1114>.

environmental organizations were recognized in China, including 1,318 ENGOs.¹⁹ Seven years later, the number of all types of environmental organizations in China increased to 7,881, including 1,065 private non-enterprise units.²⁰ With the rise of ENGOs, their roles were also recognized and accepted by the Chinese authority. In the World Summit on Sustainable Development that took place in South Africa, in 2002, a group of 18 representatives of Chinese ENGOs joined the Chinese delegation headed by the then Chinese Premier to make their voice heard by the world.

In the second phase of China's environmental protection, progresses were recorded in multiple areas. However, China's concern with environment was largely half-hearted.²¹ Economic growth was always the priority of Chinese affairs and put on a higher position in policy and strategy-making.²² Numerous obstacles existed in China environmental governance. For example, although an environmental law system had been constructed, its enforcement was weak, the power of environmental agencies was limited, and the growth of ENGOs was hindered. Therefore, although to a certain extent that China was "greened,"²³ during this phase, its environmental quality had been keeping going downward.

1.3 Phase III: 2003–2012

19 中国环保民间组织现状调查报告 (Zhongguo Huanbao Minjian Zuzhi Xianzhuang Diaocha Baogao; A Report on China's Environmental Protection Organizations), 29/04/2006, See: http://www.mep.gov.cn/hjyw/200604/t20060429_76273.htm; Wang Hai and Chen Minglei, 中国民间环保: 第三方力量在环保道路上艰难行走 (Zhongguo Minjian Huanbao: Disanfang Liliang zai Huanbao Daolu Shang Jiannan Xingzou; China's Civil Environmental Protection: The Third Party Marching on the Road of Environmental Protection with Difficulties), *Xinhuanet*, 20/10/2006, See: http://news.xinhuanet.com/environment/2006-10/20/content_5226743.htm.

20 Liu Yi, 我国环保民间组织近八千个: 五年增近四成 (Woguo Minjian Huanbao Zuzhi Jin Baqian Ge: Wunian Zeng Jin Sicheng; There are around 8000 Environmental Protection Organization in China, increased by around 40% in five years), *People.cn*, 05/12/2013, See: http://paper.people.com.cn/rmrbhwb/html/2013-12/05/content_1357312.htm.

21 Paul Harris, Environmental values in a globalizing world: the case of China, in Ian Lowe and Jouni Paavola (eds.), *Environmental Values in a Globalizing World: Nature, Justice and Governance*, Routledge, 2005, p.133; K.S. Kim, Renping Hao and Andrew Champeau, *Growth, Environment and Politics: The Case of China*, paper presented at International Conference "China and the World Economy" at the University of Washington, Seattle, 16–18 March 2012.

22 China Council for International Cooperation on Environment and Development, *China's Environmental Protection And Social Development (CCICED Task Force Summary Report)*, 2013, p. 1, See: http://english.sepa.gov.cn/Events/Special_Topics/AGM_1/2013agm/speeches2011/201605/P020160524207019648897.pdf.

23 According to the author, this specifically means that "a raft of new laws were enacted, new agencies established, new commitments to environmental protection made, and new initiatives undertaken." Richard Sanders, A Market Road to Sustainable Agriculture? Ecological Agriculture, Green Food and Organic Agriculture in China, *Development and Change*, Vol. 37, Iss. 1, 2006, p. 202.

Although “environmental protection” was a phrase occasionally appeared in the speeches of Chinese leaders and documents of Chinese government, it did not lead to serious actions. Only after 2003, when the Hu–Wen leadership came into office, environment began to climb on China’s political agenda.²⁴ The Scientific Development Outlook elaborated in 2003 led to more efforts by China to protect environment. Four years later, the conception of Ecological Civilization was introduced. At the 18th National Congress of the CPC in 2012, Ecological Civilization joined economic, political, social and cultural civilizations as a key element of the Party’s policy. “As a result, concerns over the relationship between environmental protection and social development have reached the highest political level, creating an urgent need to deepen the understanding of environmental-social relationships and identify priority fields for action.”²⁵

With more emphasis from the political aspect, more measures were taken to combat environmental contamination. From 2003 to 2012, Chinese government threw billions of *Renminbi* (RMB) to solve environmental issues. In 2012 alone, China spent 825.36 billion RMB to protect environment. This figure is around five times more than that of 2003 (162.73 billion RMB).²⁶ In addition to the increase of financial investment, progresses were also recorded in the enforcement of environmental laws, as some trial environmental courts commenced to emerge in China.²⁷ After the establishment of first such an environmental court in Guiyang city at the end of 2007, more than other 130 courts were established nationwide by 2013.²⁸

In the political system reform in 2008, China finally elevated its top environmental

24 Bernie Lee, The EU and China: Time for a strategic renewal?, in Giovanni Grevi and Thomas Renard (eds.), *Hot Issues, Cold Shoulders, Lukewarm Partners: EU Strategic Partnerships and Climate Change*, European Strategic Partnerships Observatory, Report 2, November 2012, p. 24.

25 China Council for International Cooperation on Environment and Development, *China's Environmental Protection And Social Development (CCICED Task Force Summary Report)*, 2013, pp. 3–4, See: http://english.sepa.gov.cn/Events/Special_Topics/AGM_1/2013agm/speeches2011/201605/P020160524207019648897.pdf.

26 MEP, 全国环境统计公报 (2003 年) (Quanguo Huanjing Tongji Gongbao 2003 nian; China Environmental Statistical Bulletin 2003), June 2, 2004, See: http://zls.mep.gov.cn/hjtj/qghjtjgb/200406/t20040602_90393.htm; MEP, 全国环境统计公报 2012 年 (Quanguo Huanjing Tongji Gongbao 2012 nian; China Environmental Statistical Bulletin (2012)), November 4, 2013, See: http://zls.mep.gov.cn/hjtj/qghjtjgb/201311/t20131104_262805.htm.

27 Alex Wang and Jie Gao, Environmental courts and the development of environmental public interest litigation in China, *Journal of Court Innovation*, Vol. 3, 2010, pp. 37–50.

28 Xinhua Insight: China resorts to judicial protection in green push, *Xinhuanet*, 21 July 2013, See: http://news.xinhuanet.com/english/indepth/2013-07/21/c_132560138.htm.

protection agency to the ministerial level. What is more remarkable is that with the guide of “Scientific Development Outlook” and “Ecological Civilization,” China commenced to carry out an ambitious strategy to transfer its economic growth pattern, which has been reliant on the investment of natural resources. Measures were taken to conserve energy in industrial, transport, and construction sectors. Meanwhile, profitable policies were announced to promote the growth of environmental protection industry. With the strong support of the government, China’s environmental protection industry boomed from almost nothing to one of the most economically promising emerging industries in around one decade. In 2004, China’s environmental protection industry created revenues of only 457.21 billion RMB and profits of around 40 billion RMB.²⁹ These figures increased sharply to more than three trillion and 277.72 billion respectively in 2011. In 2011, there were 23,820 units relevant to environmental protection industry, offering 3.2 million jobs.³⁰

It would be unfair to say that the Hu–Wen government was not trying to fix China’s environment. However, how far the Hu–Wen government wanted to go on environmental governance is not without doubt. As commented by Elizabeth Economy in 2007, while Chinese leaders wanted to thrive economies with manageable environmental problems, they were not willing to pay the political and economic price to get there. “Beijing’s message to local officials continues to be that economic growth cannot be sacrificed to environmental protection—that the two objectives must go hand in hand.”³¹ During Hu’s terms, China’s deteriorating environment was not ameliorated. According to the “Environmental Performance Index 2012” developed by experts from Yale University and Columbia University, China ranked 116 among 132 countries.³² This ranking was even lower than that of 2006, when China ranked at 94 among 133

29 State Environmental Protection Administration et al., 2004 年全国环境保护相关产业状况公报 (2004 nian Quanguo Huanjing Baohu Xiangguan Chanye Zhuangkuang Gongbao; Bulletin on the State of the Industries Relevant to Environmental Protection (2004)), April 2006, See: <http://www.zhb.gov.cn/image20010518/6946.pdf>.

30 MEP et al., 2011 年全国环境保护相关产业状况公报 (2011 nian Quanguo Huanjing Baohu Xiangguan Chanye Zhuangkuang Gongbao; Bulletin on the State of the Industries Relevant to Environmental Protection (2011)), April 2014, See: <http://www.mep.gov.cn/gkml/hbb/bgg/201404/W020140428585697464457.pdf>.

31 Elizabeth Economy, *The Great Leap Backward?* *Foreign Affairs*, September/October 2007 Issue, See: <https://www.foreignaffairs.com/articles/asia/2007-09-01/great-leap-backward>.

32 John Emerson et al., *Environmental Performance Index and Pilot Trend Environmental Performance Index*, Yale Center for Environmental Law and Policy, Yale University/Center for International Earth Science Information Network, Columbia University, 2012.

countries.³³

1.4 Phase IV: 2013–Present

In his last report on the work of government, the outgoing Premier Wen Jiabao warned his successors that the conflict between economic development and environmental protection was still one of the particular problems that China would have to face.³⁴ In the spring of 2013, Xi Jinping took the baton from Hu and became the leader of China's so-called fifth generation of leadership. What he also took from Hu is the heightened attention to the environmental crisis. However, the crisis that Xi is facing is much graver than that of ten years ago. In addition to appalling health damage and heavy economic loss, the large-scale environmental pollution also produced serious social unrest, which is threatening the rule of the CPC. It is reported that since 1996, the number of “mass incidents” (群体性事件 Quntixing Shijian) had been increasing by 29 percent annually. From 2006 to 2010, the number of petitions (信访 Xinfang) related to environmental issues was more than 300,000.³⁵

The deteriorating environment, on the one hand, demonstrated the failure of China's environmental policy since the 1970s, on the other hand, required new measures to be taken. Since 2013, with Xi's efforts, a policy framework aims at tackling China's environmental crisis has emerged. I argue that this framework is built under the conception of ecological civilization and is supported by political, economic and legal pillars. Within this framework, what distinguishes Xi's environmental policy from his predecessors' are: 1) the strong policy sense given to ecological civilization construction, 2) particular importance attached to the political pillar, and 3) the application of innovative methods to govern environment.

1.4.1 Ecological Civilization Construction

First proposed by Hu Jintao in his report to the 17th National Congress of the CPC,

33 Daniel Esty et al., *Pilot 2006 Environmental Performance Index*, Yale Center for Environmental Law and Policy, Yale University/Center for International Earth Science Information Network, Columbia University, 2006.

34 Wen Jiabao, Report on the Work of the Government, *China Daily*, 18 March 2013, See: http://www.chinadaily.com.cn/china/2013npc/2013-03/18/content_16317917.htm.

35 Yang Chaofei, 我国环境法律制度与环境保护 (Woguo Huanjing Falv Zhidu yu Huanjing Baohu; China's Environmental Law System and Environmental Protection), 3 December 2012, See: http://www.npc.gov.cn/npc/zgrdzz/2012-12/03/content_1744456.htm.

“ecological civilization” is seen as a Chinese expression of “sustainable development.”³⁶ It gradually rose in Chinese affairs and was written into the Party Constitution at the 18th National Congress of the CPC in 2012. Today, under Xi’s rule, ecological civilization is not only showing the political importance that Chinese leaders are attaching to environment, but also guiding China’s efforts of environmental governance, and thus occupies the top position of China’s environmental policy framework.

Although ecological civilization had been climbing on China’s political agenda during Hu’s terms, it is since 2013 that this conception began to given more policy sense. In the Third Plenary Session of the 18th Central Committee of the CPC in November 2013, the Decision of the Central Committee of the CPC on Some Major Issues Concerning Comprehensively Deepening the Reform was passed. In this document, one chapter is spent discussing the ecological civilization construction. It requires China to “establish complete and integrated institutions and systems, implement the strictest source protection system, damage compensation system and accountability system.”³⁷ Echoing this request, the “Opinions of the CPC Central Committee and the State Council on Further Promoting the Construction of Ecological Civilization” was released in May 2015. This document set the timetable and roadmap for China’s ecological civilization construction aims to 2020.³⁸ Four months later, China released a plan on the ecological civilization system construction. According to the plan, China’s ecological civilization construction needs to stick to six principles and to establish eight systems by 2020, such as the natural resource property rights system, the compensation system for use of resources and for damage to the ecological environment and a system for evaluating officials’ performance.³⁹ This plan is viewed as “revolutionary,” and “the most

36 Dai Bingguo, 生态文明是可持续发展的中国表达、中国方案和中国道路 (Shengtai Wenming shi Kechixu Fazhan de Zhongguo Biaoda, Zhongguo Fang’an, he Zhongguo Daolu; Ecological Civilization is the Chinese Expression, Chinese Solution and Chinese Road of Sustainable Development), 29 June 2015, See: <http://www.fmprc.gov.cn/ce/cedk/chn/zgwj/t1276795.htm>.

37 Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Deepening the Reform, *China.org.cn*, 16 January 2014, See: http://www.china.org.cn/china/third_plenary_session/2014-01/16/content_31212602.htm.

38 Zhao Chao and Chen Weiwei, 生态文明建设明确时间表和路线图——访国家发展改革委主任徐绍史(Shengtai Wenming Jianshe Mingque Shijianbiao he Luxiantu—Fang Guojia Fazhan Gaigewei Zhuren Xu Shaoshi; The timetable and roadmap are set for ecological civilization construction—an interview to Xu Shaoshi, the chief director of National Development and Reform Commission), *Xinhuanet*, 5 May 2015, See: http://news.xinhuanet.com/politics/2015-05/05/c_1115187800.htm.

39 中共中央国务院印发《生态文明体制改革总体方案》 (Zhonggong Zhongyang, Guowuyuan

authoritative reform proposal issued since Xi Jinping's advocacy of the ecological civilization concept in 2007.”⁴⁰

1.4.2 The Political Pillar

Administrative Measures

In a paper discusses China's environmental policy before the mid-1990s, Lotspeich Richard and Chen Aimin argue that China's environmental policy essentially relied on command and control approaches.⁴¹ This argument is not less true even after two decades. Now, China's administrative measures dealing with pollution constitute four forms: the direct attention by leaders, summon (约谈 Yuetan) and inspection (督察 Ducha), action plans on environmental issues, and the reform on environmental agencies.

1) The direct attention by leaders. Responding to the environmental crisis, serious attention has been paid by Xi and his colleagues. As revealed by Zhou Shengxian, the former minister of the MEP, 897 “written instructions” (批示 Pishi) by the seven core leaders of the standing committee of the political bureau were recorded in 2014, including 17 by Xi and 73 by Premier Li Keqiang.⁴² During the 2014 annual session of the National People's Congress, Premier Li called on his government and people to fight a war against pollution. He warned that environmental pollution has become a major problem of China and described it as the “nature's red-light warning against the model of inefficient and blind development.”⁴³

2) Summon and Inspection. One of the most striking administrative tools that the Chinese environmental authority is utilizing today is “summon.” As a mechanism

Yinfa Shengtai Wenming Tizhi Gaige Zongti Fang'an; The Central Committee of CPC and State Council published The General Reform Plan for the Ecological Civilization System), *Xinhuanet*, 21 September 2015, See: http://news.xinhuanet.com/fortune/2015-09/21/c_1116632159.htm.

40 Zhang Chun, China's New Blueprint for an 'Ecological Civilization,' *The Diplomat*, 30 September 2015, See: <http://thediplomat.com/2015/09/chinas-new-blueprint-for-an-ecological-civilization/>.

41 Lotspeich Richard and Aimin Chen, “Environmental protection in the People's Republic of China,” *Journal of Contemporary China*, Vol. 6, Iss. 14, 1997, pp. 33–59.

42 Zou Chunxia, 七常委去年 560 次批示“环保” 习近平批示 17 件 (Qi Changwei Qunian 560ci Pishi “Huanbao,” Xi Jinping Pishi 17 Jian; 560 written instructions related to environment were issued by the seven members of the standing committee of the political bureau, with 17 from Xi Jinping), *People.cn*, 16 January 2015, See: <http://env.people.com.cn/n/2015/0116/c1010-26394581.html>.

43 Xinhua Insight: China declares war against pollution, *Xinhuanet*, 5 March 2014, See: http://news.xinhuanet.com/english/special/2014-03/05/c_133163557.htm.

invented first in 2007 to deal with the illegal occupation of farmland issue,⁴⁴ it was not applied by the MEP to local government officials until 2014.⁴⁵ In 2015, the MEP directly summoned leaders of 16 cities and two counties,⁴⁶ and leaders from seven cities were summoned by the MEP in 2016 due to air pollution.⁴⁷ Compared to summon, inspection in environmental protection is a new invention. In July 2015, China released “The Plan of Environmental Protection Inspection (Trial).” At the end of 2015, a pilot environmental inspection action was taken by the MEP, and by the end of 2016, the MEP had sent two groups of inspection teams to 16 provinces, summoned and accounted 12,472 persons.⁴⁸ Environmental protection inspection is expected cover the whole China in 2017.⁴⁹

3) Action plans on environmental issues. China formulated a number of plans to govern environmental issues. For example, China released the National Ten Measures to deal with air pollution in June 2013. Building on these ten measures, China further formulated the Action Plan on Prevention and Control of Air Pollution in September 2013. To implement this action plan, led by the MEP, seven ministries and departments of the State Council signed a detailed action plan with Beijing, Tianjin, Hebei, Shanxi, Shandong and the Inner Mongolia Autonomous Region. This detailed action plan set clear and nonnegotiable targets for the efforts of these regions to improve air quality in

44 中国启动新一轮土地违法问责行动：约谈密集展开 (Zhongguo Qidong Xinyilun Tudi Weifa Wenze Xingdong: Yuetan Miji Zhankai; China launches a new round of actions on accountability against crimes of land use: summons are implemented densely), *Xinhuanet*, 7 January 2011, See: http://news.xinhuanet.com/politics/2011-01/07/c_12955653.htm.

45 让环保约谈来得更猛烈些 (Rang Huanbao Yuetan Laide geng Menglie xie; Make the environmental protection summon more fierce), *Beijing Youth Daily*, 20 January 2017, See: http://epaper.yinet.com/html/2017-01/20/content_236579.htm?div=-1.

46 Wang Kaiguang, 环保部约谈 16 市政府负责人 (Huanbaobu Yuetan 16 Shizhengfu Fuzeren; The MEP summoned leaders of 16 city governments), *Xinhuanet*, 24 May 2016, See: http://news.xinhuanet.com/legal/2016-05/24/c_129009537.htm.

47 Liu Shixin, 2016 年 7 个城市因空气质量恶化被环保部约谈 (2016 nian 7 ge chengshi yin kongqi zhiliang ehua bei huanbaobu yuetan; Leaders of seven cities were summoned by the MEP), *Xinhuanet*, 20 January 2017, See: http://news.xinhuanet.com/politics/2017-01/20/c_1120355073.htm.

48 Chen Qian, “改善环境质量这一年”之督察篇 锐利一变气象新——推进环保督察落实党政同责综述 (“Gaishan Huanjing Zhiliang Zheyinian” zhi Duchu pian, Ruili Yibian Qixiang Xin—Tuijin Huanbao Duchu Luoshi Dangzheng Tongze Zongshu; “Improving environmental quality in this year”—Ducha, dramatic change leads to new resolution—a review of promoting environmental protection inspection and same responsibility for party and governmental leaders), *MEP*, 3 January 2017, See: http://www.mep.gov.cn/xxgk/hjyw/201701/t20170103_393755.shtml.

49 Zhang Guo, 中央环保督查今年将首次覆盖全国 (Zhongyang Huanbao Duchu Jinnian jiang Shouci Fugai Quanguo; The environmental protection inspection by the MEP will cover the whole China this year for the first time), *People.com.cn*, 19 March 2017, See: <http://politics.people.com.cn/n1/2017/0319/c1001-29154371.html>.

the next five years. Another two action plans on prevention and control of water pollution and soil pollution were put into effect in 2015 and 2016, respectively.

4) Responsibility of local governments. In December 2013, China founded the Leading Group for Overall Reform. It is in charge of “designing reform on an overall basis, arranging and coordinating reform, pushing forward reform as a whole, and supervising the implementation of reform plans.”⁵⁰ At the 14th meeting of this group in July 2015, a number of plans were passed to strengthen the supervision of environmental protection. For the first time, it confirmed that the Party and government officials shall share responsibilities in environmental accidents.⁵¹ In August 2015, a trial document with 19 articles for the accountability on the Party and government officials was released. It is expected to force the local governments to take the environmental protection more seriously.⁵²

5) Reform on environmental governance system. The Chinese environmental governance system welcomed a reform year in 2016. The MEP set three respective departments to govern air, water and soil contamination in March.⁵³ In October, to better govern river pollution, China made the decision to promote the river chief system (河长制 He Zhang Zhi). The system requires the main local government leaders taking responsibility in governing water pollution.⁵⁴ It is expected to be established by June 2018.⁵⁵ In addition to these endeavors, the reform of the vertical management of

50 President Xi to head leading group for overall reform, *Xinhuanet*, 30 December 2013, See: http://news.xinhuanet.com/english/china/2013-12/30/c_133007127.htm.

51 China nurtures better environmental supervision, *Xinhuanet*, 1 July 2015, See: http://news.xinhuanet.com/english/2015-07/01/c_134373576.htm; Jin Yu, 中央深改组会议：领导干部损害生态环境终身追责(Zhongyang Shen'gaizu Huiyi: Lingdao Ganbu Sunhai Shengtai Huanjing Zhongshen Zhuize; The meeting of the Leading Group for Overall Reform: lifetime accountability to cadres for environmental damage), *China.com.cn*, 2 July 2015, See: http://www.china.com.cn/legal/2015-07/02/content_35960822.htm.

52 Hua Chunyu, 新华时评：终身追责倒逼“关键少数”敬畏绿水青山 (Xinhua Shiping: Zhongshen Zhuize Daobi “Guanjian Shaoshu” Jingwei Lvshui Qingshan; Xinhua Insight: The life-long accountability forces the “key minorities” to worship clean waters and green mountains), *Xinhuanet*, 17 August 2015, See: http://news.xinhuanet.com/politics/2015-08/17/c_1116282541.htm.

53 Wang Shuo, 环保部新“三司”职能公布 设立水、大气、土壤专司 (Huanbaobu xin “sansi” zhineng gongbu, sheli shui, daqi, turang zhaunsi; The duty of the new “three departments” are announced, three departments on water, air, and soil are set in the MEP), *China.com.cn*, 13 June 2016, See: <http://finance.china.com.cn/roll/20160613/3762630.shtml>.

54 Background Material of the Opinion on Comprehensively Promoting the River Chief System, *China.com.cn*, 12 December 2016, See: http://www.china.com.cn/zhibo/zhuanti/ch-xinwen/2016-12/12/content_39896976.htm.

55 Wang Jianing, 水利部：年底前 22 个省份将全面建立河长制 (Shuilibu: niandi qian 22 ge shengfen jiang quanmian jianli hezhangzhi; The river chief system will be built in 22 provinces by the

environmental protection agencies below the provincial level is finally launched. At the Fifth Plenary Session of the Eighteenth CPC Central Committee convened in October 2015, the vertical management reform of environmental protection agencies below the provincial level was lifted to China's political agenda. This reform aims to solve four problems in China's environmental governance concerning the responsibility of local governments, the interference of local governments to environmental inspection and monitoring, the governance of environmental issues in multiple regions, and the construction of local environmental authorities. It is viewed as a fundamental reform on China's local environmental protection administrative system.⁵⁶ Pilot reform had taken place in November 2016, and the overall reform is expected to be concluded by June 2018.⁵⁷

The administrative measures—particularly those aim to the local officials—on one side, might force the local governments to attach more importance to environmental protection, on the other hand, might harm other fields due to too much importance. For example, in the case of summon, when local officials are summoned by the MEP, they usually feel the political pressure and the risk of their future career. Under the pressure, they would take environmental protection as a political mission. A case occurred in 2015 showed the price by harsh environmental protection measures. In February 2015, the newly appointed mayor of Linyi—an industrial city in eastern China—was publicly summoned by the MEP due to grave environmental pollution. The next day after the summon, a meeting was called by the government to mobilize the whole city to fight against pollution. Shortly after the meeting, the city government closed 57 polluting factories. The harsh measures by the Linyi government were supported by the MEP and experts in environmental law.⁵⁸ However, the price was heavy: loss of around 60,000

end of this year), *Xinhuanet*, 21 March 2017, See: http://news.xinhuanet.com/politics/2017-03/21/c_129514586.htm.

56 Wang Kunting and Tong Ke'nan, 解读《关于省以下环保机构监测监察执法垂直管理制度改革试点工作的指导意见》(Jiedu “Gunayu Sheng Yixia Huanbao Jigou Jiance Jiancha Zhifa Guanli Zhidu Gaige Shidian Gongzuo de Zhidao Yijian;” Reading “Guiding Opinions on the Pilot Reform of the Vertical Management System for the Monitoring, Supervision, and Law Enforcement of Environmental Protection Agencies below the Provincial Level”), *MEP*, 23 September 2016, See: http://www.mep.gov.cn/xxgk/hjyw/201609/t20160923_364595.shtml.

57 Wang Erde, 河北重庆率先启动环保垂直管理改革 (Hebei Chongqing Shuaixian Qidong Huanbao Chuizhi Guanli Gaige; Hebei and Chongqing initiated the reform of the environmental protection vertical management system), *21jingji*, 30 November 2016, See: http://epaper.21jingji.com/html/2016-11/30/content_51509.htm.

58 Sun Xiuyan, 临沂治污执法被指“过严” 环保部：绝不能失之于宽 (Linyi Zhiwu Zhifa Beizhi

jobs, risk of a regional financial crisis and increasing social unrest.⁵⁹

Public Participation

Public participation is the key to successful environmental governance.⁶⁰ Facing the down-going environmental quality and the rising public dissatisfaction, China realized that the public must be involved to govern the environment. After the establishment of China's first ENGO in 1994, 3,539 ENGOs were accounted by 2008.⁶¹ During the past few years of Xi's rule, public participation has always been underlined by the government. For example, in the Opinions on Accelerating the Construction of Ecological Civilization released in April 2015, a chapter with three articles was spent encouraging the public participation. This was viewed by Xu Shaoshi, the then head of the National Development and Reform Commission as a breakthrough made by this document.⁶²

Although public participation is emphasized by the authority, China is still cautious to the public in governing the environment. In the spring of 2015, a few days before the Chinese "two sessions" (两会 Lianghui), Chai Jing—a renowned Chinese journalist, exploded Chinese internet by publishing a documentary on smog: "Under the Doom" (穹顶之下 Qiongdong Zhixia). This documentary, which quickly occupied the headlines of Chinese media, is believed to have helped enlighten the public awareness on environmental protection and was compared by the then newly appointed minister of environmental protection with the "Silent Spring" by Rachel Carson.⁶³ However, although highly praised by the minister of environmental protection, the film was removed from the internet.⁶⁴ As commented by Joanna Lewis of Georgetown

"Guoyan'," Huanbaobu: Juebuneng Shizhiyukuan; The law-enforcement to curb pollution is criticized as "too harsh," MEP: can never fail due to being loose), *People.cn*, 6 July 2015, See: <http://env.people.com.cn/n/2015/0706/c1010-27256974.html>.

59 Govt justifies pollution crackdown despite huge job losses, *China Daily*, 3 July 2015, See: http://www.chinadaily.com.cn/china/2015-07/03/content_21174277.htm.

60 Isabel Hilton, Addressing the Gap between Rhetoric and Reality in China's Air Pollution Control: Why Civil Society Is Essential, 28 April 2014, See: <http://www.nbr.org/research/activity.aspx?id=431>.

61 Cui Jing, 中国环保民间组织总量已达3500余家 (Zhongguo Huanbao Minjian Zuzhi Zongliang Yi Da 3500 Yu Jia; The Number of China's Environmental NGOs has Reached to Over 3500), *Xinhuanet*, 30 October 2008, See: http://news.xinhuanet.com/environment/2008-10/30/content_10282938.htm.

62 Everyone responsible for creating a healthy ecological civilization, *China Daily*, 7 May 2015, See: http://www.chinadaily.com.cn/opinion/2015-05/07/content_20642952.htm.

63 Cang Wei, Comparisons made with Silent Spring, *China Daily*, 3 March 2015, See: http://usa.chinadaily.com.cn/epaper/2015-03/03/content_19705020.htm.

64 China takes Under the Dome anti-pollution film offline, *British Broadcasting Corporation*, 7 March

University: “it is difficult to imagine the government creating a space for the public to mobilize around environmental protection out of concern that such mobilization could spill over into other issues and create broader social instability.”⁶⁵

Another touchstone on Chinese government’s attitude to public participation is the mounting environmental protests. In the last few years, some of the most violent protests were against those paraxylene (PX, whose products are widely used to polyesters and fabrics) projects, such as the Kunming (Yunnan Province) protest in 2013, the Maoming (Guangdong Province) protest in 2014, and the Shanghai protest in 2015. Although it is believed that the Chinese elites have been showing more sympathy to protesters, in these examples above, protests were either heavily blocked or severely repressed. A sea change in state responses to protest is not yet evident, and it remains to be seen how these environmental protests adapt to the changing political climate under Xi Jinping.⁶⁶

1.4.3 The Economic Pillar

Financial Investment

During Hu’s terms, the budget to environmental protection increased dramatically. This tendency is continued by Xi Jinping. In 2013, the national budget to environmental protection was 338.3 billion RMB, kept rising at a speed of more than 14% annually since 2011,⁶⁷ and the overall investment to environmental governance reached to 903.72 billion RMB.⁶⁸ Although more budgets have been spent protecting the environment, China’s environmental investment is still blamed for two problems. First, China’s environmental investment is still far to be enough. Although had been rising steadily and made a record in 2013, the investment in environmental protection in 2013

2015, See: <http://www.bbc.com/news/world-asia-31778115>.

65 Steven Mufson, This documentary went viral in China. Then it was censored. It won’t be forgotten, *Washington Post*, 16 March 2015, See: <http://www.washingtonpost.com/news/energy-environment/wp/2015/03/16/this-documentary-went-viral-in-china-then-it-was-censored-it-wont-be-forgotten/>.

66 H Christoph Steinhardt and Fengshui Wu, China’s New Species of Environmental Protest, *International Public Policy Review*, 28 March 2016, See: <http://ipreview.com/index.php/Home/Blog/single/id/82.html>.

67 Li Zhi, 吴晓青: 2014 年财政节能环保投入会较大幅度增长 (Wu Xiaoqing: 2014nian Caizheng Jieneng Huanbao Touro Hui Jiaoda Fudu Zengzhang; Wu Xiaoqing: The financial investment on energy conservation and environmental protection will rise substantially), *China.com.cn*, 8 March 2014, See: http://news.china.com.cn/2014lianghui/2014-03/08/content_31718552.htm.

68 2013 年环境统计年报——环境污染治理投资 (2013 nian Huanjing Tongji Nianbao-Huanjing Wuran Zhili Touzi; Environmental Statistical Annual Report 2013—Investment), 24 November 2014, See: http://zls.mep.gov.cn/hjtj/nb/2013tjnb/201411/t20141124_291865.htm.

accounted only 1.59% GDP—still below 2% GDP, which is believed a necessity for tackling environmental issues effectively.⁶⁹ As China is making ambitious plans to improve its environment, its financial generosity to these plans is yet to be demonstrated. For example, to translate China's Action Plan on Prevention and Control of Air Pollution into reality, 1.7 trillion RMB is needed in five years,⁷⁰ which means that China has to invest 340 billion RMB annually to cleanse its air—including 270 billion RMB from the central government. However, only an investment of 15 billion RMB from the central government was recorded in 2013 and 2014 together. Second, although the growth of the environmental investment is much faster than that of GDP, China's environmental deterioration was never successfully contained. This indicates that the efficiency of China's environmental investment is low, and is urgently to be raised.⁷¹

To collect more budgets for environmental governance, China now is taking two measures: the Public-Private-Partnership (PPP) model and the green finance. China commenced to promote the PPP model in 2015. By March 2016, 7,721 programmes had been registered with a scale of more than eight trillion RMB, among which, 406 programmes (5%) and 522.1 billion RMB (6%) had been invested in the “ecological construction and environmental protection” field.⁷² The PPP model is expected to help China's environmental protection by introducing the private capital.⁷³ The other measure is the green finance, which mushroomed in 2016. As an example, consider the growth of the green bond, which is one of the products of green finance. First promoted by the People's Bank of China in late 2015, China's green bond issuance increased

69 Chen Liang et al., 环保投入急需加强绩效评价 (Huanbao Touru Jixu Jiaqiang Jixiao Pingjia; The performance evaluation of environmental investment is urgently to be strengthened), *Cenews.com.cn*, 25 November 2014, See: <http://finance.chinanews.com/ny/2014/11-25/6811932.shtml>.

70 J. T. Quigley, Chinese Government Will Spend \$277 Billion to Combat Air Pollution, *The Diplomat*, 27 June 2013, See: <http://thediplomat.com/2013/07/chinese-government-will-spend-277-billion-to-combat-air-pollution/>.

71 Chen Liang et al., 环保投入急需加强绩效评价 (Huanbao Touru Jixu Jiaqiang Jixiao Pingjia; The performance evaluation of environmental investment is urgently to be strengthened), *Cenews.com.cn*, 25 November 2014, See: <http://finance.chinanews.com/ny/2014/11-25/6811932.shtml>.

72 财政部发布全国 PPP 综合信息平台项目库季报第 2 期 (Caizhengbu Fabu Quanguo PPP Zonghe Xinxing Pingtai Xiangmuku Jibao Di 2 Qi; The Ministry of Finance releases the 2nd Issue of the quarterly report of the National PPP Comprehensive Informational Platform), *China Financial and Economic News*, 27 April 2016, See: http://www.chfns.com/cjxw/ppp/201604/t20160427_1967820.html.

73 Gao Wei, 环境污损赔偿渐行渐近 环保 PPP 模式催生新增长点 (Huanjing Wusun Peichang Jianxing Jianjin, Huanbao PPP Moshi Cuisheng Xin Zengzhangdian; The compensation for environmental pollution is approaching, the environmental protection PPP model gives birth to new growth point), *People.cn*, 16 June 2016, See: <http://finance.people.com.cn/n1/2016/0616/c1004-28448805.html>.

rapidly from almost zero to 238 billion RMB (36.2 billion USD), accounting for 39% of global issuance in 2016.⁷⁴ In September 2016, the State Council of China released the Guidelines for Establishing the Green Financial System. According to this document, the main purpose of establishing the green financial system is to “mobilize and incentivize more social (private) capital to invest in green industries, and to more effectively control investments in polluting projects.”⁷⁵

Environmental Protection Industry

In the past decade, China’s environmental protection industry experienced a boom from almost nothing to one of the most economically promising industries. Xi Jinping’s government takes the environmental protection industry as a critical measure to govern the environment. As stated by Premier Li, “the key [to reach a balance between governing environment and promoting economic development] is to eliminate the backward industry, develop the emerging environmental protection and energy conservation industry, and try to make the growth of the environmental protection and energy conservation industry overrun the elimination of the backward industry.”⁷⁶ To nurture the industry, the State Council issued the Opinions on Accelerating the Development of Environmental Industry in August 2013, which is believed to have marked “another important step beneficial to both the present and the future the new government has taken for the purpose of maintaining economic growth, adjusting economic structure, facilitating reform and benefiting the people.”⁷⁷ However, while China is giving a fillip to its environmental protection industry, the capability of the environmental protection industry to be profitable and thus its sustainable growth are not without doubt, as of these companies—particularly ones in the renewable energy sector—are heavily subsidized by the government. This might lead to a grave financial

74 Climate Bonds Initiative and the China Central Depository & Clearing Company, China Green Bond Market 2016, January 2017, See: <https://www.climatebonds.net/files/files/SotM-2016-Final-WEB-A4.pdf>.

75 Guidelines for establishing the green financials system, *China Daily*, 4 September 2016, See: http://usa.chinadaily.com.cn/business/2016-09/04/content_26692956.htm.

76 Guo Jinchao, 李克强谈治污：让新兴节能环保产业跑赢落后产业 (Li Keqiang Tan Zhiwu: Rang Xinxing Jieneng Huanbao Chanye Paoying Luohou Chanye; Li Keqiang talks about pollution governance: make the emerging environmental protection industry overrun the backward industry), *People.cn*, 9 September 2014, See: <http://politics.people.com.cn/n/2014/0909/c70731-25628967.html>.

77 Opinions of the State Council on Accelerating the Development of Environmental Industry, 12 August 2013, See: http://english.mep.gov.cn/News_service/infocus/201308/t20130814_257467.htm.

risk to China.⁷⁸

1.4.4 The Legal Pillar

Environmental Legislation

China's environmental legislation was initiated simultaneously with its reform and opening up. With the emergence of new issues in China's environmental governance, the renewal of environmental protection laws is required. In June 2013, the Supreme Court and Supreme Procuratorate jointly issued the Interpretation on Several Issues Concerning the Application of Law in the Handling of Criminal Cases of Environmental Pollution. By enhancing the legal price of environmental pollution, it broke the dilemma of "higher price for compliance, lower price for illegality" (守法成本高, 违法成本低 Shoufa Chengben Gao, Weifa Chengben Di).⁷⁹ The Environmental Protection Law Amendments was passed by the SCNPC in April 2014, and put into effect in January 2015. This is the first amendment of China's Environmental Protection Law since it took effect in 1989. In this revised Environmental Protection Law, more regulations on greater fines, punishment to company executives and local officials are added.⁸⁰ Its enforcement was described by Premier Li as a "triumph card" rather than a "cotton swab."⁸¹ Although highly praised by Li, this environmental protection law incurred critiques due to its limited actual power, its failure to acknowledge citizens' basic rights to environment, and the potential obstacles that its enforcement might encounter.⁸² In August 2015, China's top legislature adopted an amendment to the Law on the Prevention and Control of Air Pollution, which finally took effect in January 2016. In addition, the Law on the

78 Cynthia Kao, China's Green Leap Forward, *The Diplomat*, 30 July 2015, See: <http://thediplomat.com/2015/07/chinas-green-leap-forward/>.

79 Supreme Court and Supreme Procuratorate Jointly Issued the "Interpretation on Several Issues Concerning the Application of Law in the Handling of Criminal Cases of Environmental Pollution," 19 June 2013, See: http://english.mep.gov.cn/News_service/infocus/201306/t20130624_254250.htm; Li Zheng, 人民时评: 让“APEC 蓝”永驻天空 (Renmin Shiping: Rang "APEC Lan" Yongzhu Tiankong; People Insight: make the "APEC Blue" stay in the sky), *People.cn*, 7 November 2014, See: <http://cpc.people.com.cn/pinglun/n/2014/1107/c78779-25991112.html>.

80 China's Legislature Votes to Toughen Environmental Protection Law, *China Central Television-America*, 29 April 2014, See: <http://www.cctv-america.com/2014/04/29/chinas-legislature-votes-to-toughen-environmental-protection-law>.

81 Li Keqiang highlights enforcement of the environment law not a cotton swab but a triumph card, 16 March 2015, See: http://english.mep.gov.cn/News_service/infocus/201503/t20150323_297824.htm.

82 Bo Zhang and Cong Cao, Policy: Four gaps in China's new environmental law, *Nature*, 21 January 2015, See: <http://www.nature.com/news/policy-four-gaps-in-china-s-new-environmental-law-1.16736>.

Prevention and Control of Water Pollution is also to be amended, meanwhile three new laws are expected in the near future, including the Law on the Prevention and Control of Soil Pollution.⁸³

Environmental Law Enforcement

In the history of China's environmental protection, although numbers of environmental laws had been enacted, the enforcement of these laws had been seriously hindered.⁸⁴ Due to the emphasis to the political aspect, the enforcement of environmental laws is becoming increasingly firm under Xi's rule. In 2014, 73,160 cases relevant to environmental pollution were recorded—10% more than that of 2013. The fines collected from polluters increased by 34.4% and reached to RMB 3.17 billion.⁸⁵ The collaboration between the local environmental authorities and governments is also becoming closer. In 2014, 2,080 environmental cases were transferred to the police, which were three times more than that of 2013 and twice as many as that of the last ten years combined.⁸⁶

However, as reported by Xinhuanet—a Chinese official media, some local environmental agencies are still suffering from an embarrassing situation: collect budget by fining polluting firms, vehicles are confiscated and uniforms of the officers are not united.⁸⁷ Today, in average, there are only 63.2 environmental law enforcement officers monitoring every 10,000 km² Chinese land.⁸⁸ The situation is particularly unoptimistic

83 袁驷：将制定“土壤污染防治法”、“核安全法”等 (Yuan Si: Jiang Zhiding “Turang Wuran Fangzhi Fa,” “Heanquan Fa” Deng; Yuan Si: Law on Prevention and Control of Soil Pollution, Law on Nuclear Security, etc. will be formulated), *People.cn*, 10 March 2015, See: <http://lianghui.people.com.cn/2015npc/n/2015/0310/c394390-26669643.html>.

84 Stefanie Beyer, Environmental law and policy in the People's Republic of China, *Chinese Journal of International Law*, Vol. 5, No. 1, 2006, pp. 185–211.

85 Yang Yi, 2014 年全国环境违法案件处罚 31.7 亿元 同比增长 34.4% (2014 nian Quanguo Huanjing Weifa Anjian Chufa 31.7 yi yuan Tongbi Zengzhang 34.4%; Fines of the environmental law breaking cases reached to 3.17 billion yuan, increased by 34.4%), *People.cn*, 14 April 2015, See: <http://env.people.com.cn/n/2015/0414/c1010-26844195.html>.

86 陈吉宁：今年抓好四项工作治理大气污染 (Chen Jining: Jinnian Zhuahao Sixiang Gongzuo Zhili Daqi Wuran; Chen Jining: Four major efforts will be taken to tackle air pollution), *Xinhuanet*, 7 March 2015, See: http://news.xinhuanet.com/politics/2015lh/2015-03/07/c_134046683.htm.

87 Gong Zhihong et al., 经费靠罚款、车辆被清理、着装无统一：基层环保队伍如何突破“伪军”尴尬? (Jingfei kao Fakuan, Cheliang Bei Qingli, Zhuozhuang Wu Tongyi: Jiceng Huanbao Duiwu Ruhe Tupo “Weijun” Ganga?; Collect budget by fining, vehicles are confiscated and uniforms are not united: How do the local environmental protection authorities break the “puppet army” embarrassment?), *Xinhuanet*, 10 June 2015, See: http://news.xinhuanet.com/politics/2015-06/10/c_1115575290.htm.

88 Zhang Weijie, 中国环保执法人员每 63 人负责一万平方公里 (Zhongguo Huanbao Zhifa Renyuan Mei 63 ren Fuze Yiwan Pingfang Gongli; Per 63 environmental crews are taking care of 10,000 Km²

in western China. For example, in Ankang—a city in Shaanxi province, there were only 68 environmental law enforcement officers monitoring nine counties and one district in 2015, while there should be 240 officers in a city like Ankang. In two of the counties, there were even only two officers in each of them.⁸⁹ China's environmental law enforcement has been an old problem, but it is getting more urgent to be solved as it is producing lethal barriers to achieve China's ambitious environmental targets. These targets can only be reached with the support of enough budgets and well-trained crews.

Although more measures to protect China's environment are expected in the future, it is already clear that under Xi's rule, an environmental policy framework under the general concept of ecological civilization has emerged, which is supported by political, economic and legal pillars. Analyzing Xi's environmental policy, three conclusions can be drawn. First, Xi Jinping's environmental policy is generally a continuity of China's past environmental policy, rather than a dramatic revolution. He inherits the policies of his predecessors, particularly the command and control approach that China has always been sticking to. Second, Xi Jinping has constructed an environmental policy framework to govern China's environmental issues. This framework is built under the conception of "ecological civilization," and support by three pillars: politically, economically, and legally. Three, China is taking new methods to govern its environment (such as environmental protection inspection, river chief system, PPP model, and green finance), which differentiate Xi's environmental policy to that of his predecessors.

2. The Evolution of China's Environmental Diplomacy

Learning from international experience and attracting international assistance—in a word, opening to international community, have always been a significant part of China's environmental policy.⁹⁰ During the over four decades since its attendance to

land), *China News*, 28 August 2015, See: <http://www.chinanews.com/gn/2015/08-28/7493986.shtml>.

89 要重视基层环境执法能力建设 (Yao Zhongshi Jiceng Huanjing Zhifa Nengli Jianshe; More attention should be paid to the construction of environmental law-enforcement capability), *环境保护 (Huanjing Baohu; Environmental Protection)*, Vol. 42, Iss. 15, 2015, p. 64.

90 Wu Fengshi, Environmental politics in China: An issue area in review, *Journal of Chinese Political*

the UNCHE in 1972, China's involvement to international environmental politics has evolved from a limited participant to an active one, and finally to a proactive participant. In 1990, China published its first guiding document on environmental diplomacy—China's Principles and Positions on Global Environmental Problems. In this document, China claims that it had always been active to international environmental affairs, and was willing to take reasonable responsibilities and contribute to the solution of global environmental issues. China systematically elaborated the principles it adhered in its participation in international environmental governance and its positions on some specific issues, such as global warming, protection of ozone layer, and biodiversity. It declared that it adhered eight principles to tackle global environmental challenges: 1) deal with the relationship between environmental protection and economic development correctly, 2) clearly define the parties that should take the major responsibility of global environmental issues, 3) protect the sovereignty of exploiting natural resources and do not interfere the internal affairs of one another, 4) the wide participation of developing countries is of critical necessity, 5) the particular situations and needs of developing countries should be fully considered, 6) environmental protection should not be taken as a new additional qualification of providing development aid, and should not be taken as an excuse of building a new trade barrier, 7) developed countries should provide fund and environmental protection technologies to help the developing world deal with environmental issues, 8) it is necessary to strengthen international legislation on environmental protection.⁹¹ During the 1992 UNCED held in Rio de Janeiro, these principles were summarized and more precisely elaborated by the then Chinese Premier Li Peng: 1) economic development should be coordinated with environmental protection, 2) environmental protection is a task for all human beings, but the developed countries should take more responsibility, 3) the international environmental cooperation should be based on the respect of national sovereignty, 4) the peace and

Science, Vol. 14, Iss. 4, 2009, pp. 383–406; Chen Sulan and Juha Uitto, Governing marine and coastal environment in China: building local government capacity through international cooperation, *China Environment Series*, Iss. 6, 2003, pp. 67–80.

91 See: Li Xu'e, 全球环境问题和我国的原则立场 (Quanqiu Huanjing Wenti he Woguo de Yuanze Lichang; Problems of Global Environment and the Principled Stand of China), *中国人口, 资源与环境 (Zhongguo Renkou, Ziyuan yu Huanjing; China Population Resources and Environment)*, Vol. 1, No. 2, 1991, pp. 29–32; Li Yantao, 我国关于全球环境问题的原则立场 (Woguo Guanyu Quanjue Huanjing Wenti de Yuanze Lichang; China's Principles and Positions on Global Environmental Problems), *中国人口, 资源与环境 (Zhongguo Renkou, Ziyuan yu Huanjing; China Population Resources and Environment)*, No. 2, 1992, p. 89.

stability of the world is of great significance of environmental protection, 5) the realistic benefits of states and the long-term interests of the world should both be considered.⁹²

I divide the evolution of China's environmental diplomacy into three phases. The first phase begins from China's participation of the UNCHE in 1972 and ends in 1990. In this phase, China began to know and set its feet into environmental politics, and played a marginal role in this sphere. The second phase begins from 1991, when China hosted the Ministerial Conference of Developing Countries on Environment and Development. By hosting that conference, China sent a signal that it was attempting to seek a certain leading role in international environmental affairs, particularly among the developing countries. China's role in global environmental politics in this phase (1991–2008) can be described as active. The year of 2009 marked the beginning of the third phase of China's environmental diplomacy, when China declared that it would cut its carbon emission per capita by 40–45 percent by 2020. This was the first time that China set a carbon emission reduction target and indicated that China commenced to take responsibility in constraining global warming.

2.1 Phase I: 1972–1990

The attendance to the 1972 UNCHE was not only “China's first appearance on the international stage following the communist revolution,”⁹³ but also the beginning of China's environmental protection and environmental diplomacy. China took an active role at that conference and was not shy to put forward and insist its opinions on international environmental issues. This was mirrored by China's contribution to the formulation of the “Declaration on the Human Environment” generated by that conference. For example, the words of Article five echo Mao Zedong's opinion on the role of the people. It states that:

Of all things in the world, people are the most precious. It is the people that propel social progress, create social wealth, develop science and technology

92 李鹏总理在环发大会首脑会议上的讲话 (Lipeng Zongli Zai Huanfa Dahui Shou nao Huiyi Shang de Jianghua; Speech by Premier Li Peng Delivered at the United Nations Summit Conference on Environment and Development), *中华人民共和国国务院公报* (*Zhonghua Renmin Gongheguo Guowuyuan Gongbao; Gazette of the State Council of the People's Republic of China*), July 15, 1992, Issue No. 15 (1992), Serial No. 700, pp. 502–505, See: <http://www.gov.cn/gongbao/shuju/1992/gwyb199215.pdf>.

93 Katherine Morton, *China and the global environment: Learning from the past, anticipating the future*, Lowy Institute for International Policy, Lowy Institute Paper 29, 2009, p. 76.

*and, through their hard work, continuously transform the human environment. Along with social progress and the advance of production, science and technology, the capability of man to improve the environment increases with each passing day.*⁹⁴

In addition, China also led the efforts of underlining the role of war and mass destructive weapons in environmental destruction, which resulted to the Principle 26.⁹⁵

During this initiative phase of China's environmental diplomacy, China made its history in various fields. It began to put more signatures on international environmental conventions, attend environmental conferences, and cooperate with other states and organizations to protect the environment. For example, China's became one of the first members of the United Nations Environment Programme in 1973, and set up its permanent mission there in 1976. In 1979, China signed an agreement with the then World Wildlife Fund International (the now World Wildlife Fund) on the conservation of wildlife. In the following year, the Chinese Society for Environmental Sciences was authorized to join the World Wildlife Fund. In 1980 alone, China joined three international conventions on environment: "International Convention on Civil Liability for Oil Pollution Damage (1969)," "International Convention for the Regulation of Whaling," and "Convention on International Trade in Endangered Species of Wild Fauna and Flora." In 1983, China joined the "International Convention for the Prevention of Pollution from Ships." In 1985, China joined "Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter," and "Convention Concerning the Protection of the World Cultural and Natural Heritage," with "London Guidelines for the Exchange of Information on Chemicals in International Trade" followed in 1987.⁹⁶ At the bilateral level, China reached a protocol

⁹⁴*Declaration of the United Nations Conference on the Human Environment*, See: <http://www.un-documents.net/unchedec.htm>.

⁹⁵ *Ibid.* Ding Jinguang, 中国环境外交的开端：成就与问题 (Zhongguo Huanjing Waijiao de Kaiduan: Chengjiu yu Wenti; The Initiation of China's Environmental Diplomacy: Achievement and Problems), *甘肃社会科学 (Gansu Social Sciences; Gansu Shehui Kexue)*, Iss. 5, 2007, pp. 168–170. The Principle 26 states: "Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction, states must strive to reach prompt agreement in the relevant international organs on the elimination and complete destruction of all weapons."

⁹⁶ A list of conventions on environment that China concluded or signed, please refer to: 中国已经缔约或签署的国际环境公约 (目录), (Zhongguo Yijing Diyue huo Qianshu de Guoji Huanjing Gongyue (Mulu); Conventions on Environment that China Concluded or Signed (Index)), 17/10/2003, See: http://gjs.mep.gov.cn/gjhjhz/200310/t20031017_86645.htm.

with the US on the cooperation of environmental protection technology in 1980. In 1988, China and Dutch signed the Sino–Dutch Memorandum of Understanding on Environmental Cooperation. In the same year, China and the then Soviet Union signed an agreement on cooperation in fisheries. In 1989, both sides signed the Memorandum on Cooperation in Nature Conservation between China and the USSR. A similar agreement between China and Mongolia was achieved in 1990.⁹⁷

With the rise of environment in China's foreign affairs, Chinese foreign-policy makers also paid increasing attention to this newly developed area. As early as 1985, a department of foreign affairs was set at the then National Bureau of Environmental Protection, and an office for foreign affairs was founded in 1988. In October 1989, the term of “environmental diplomacy” was first officially elaborated by Song Jian—the then State Councilor and the head of Environmental Protection Committee of the State Council.⁹⁸ In July 1990, China passed the China's Principles and Positions on Global Environmental Problems. A few months later, the State Council published the Decision to Further Strengthen the Environmental Protection. This document made it clear on the responsible authorities on environmental diplomacy by requiring the Ministry of Foreign Affairs and the National Bureau of Environmental Protection cooperating with other departments.⁹⁹

2.2 Phase II: 1991–2008

In the late 1980s and early 1990s, the role of environment in global politics saw a dramatic rise. Recognizing this rise, China began to seek a leadership in environmental politics, particularly among the developing countries. However, although China was politically more active in global environmental governance, it was reluctant to take

97 A list of bilateral agreements that China concluded or signed relate to environment, please refer to: 中国已经缔约或签署的双边环境保护协定, (*Zhongguo Yijing Diyue huo Qianshu de Shuangbian Huanjing Baohu Xieding*; Bilateral Agreements on Environmental Protection that China Concluded or Signed), 18/11/2002, See: http://gjs.mep.gov.cn/sbhz/200211/t20021118_83387.htm.

98 Lester Ross, China: environmental protection, domestic policy trends, patterns of participation in regimes and compliance with international norms, *The China Quarterly*, No. 156, 1998, pp. 809-835; Zhang Haibin, 中国环境外交的演变 (*Zhongguo Huanjing Waijiao de Yanbian*; The evolution of China's Environmental Diplomacy), *世界经济与政治* (*Shijie Jingji yu Zhengzhi*; *World Economic and Politics*), Iss. 11, 1998, pp. 12–15.

99 国务院关于进一步加强环境保护工作的决定 (1990年12月5日) (*Guowuyuan Guanyu Jinyibu Jiaqiang Huanjing Baohu Gongzuo de Jueding* (1990 nian 12 yue 5 ri); Decision of the State Council to Further Strengthen the Environmental Protection (05/12/1990)), *China.com.cn*, 08/08/2006, See: http://www.china.com.cn/law/flfg/txt/2006-08/08/content_7058525.htm.

responsibilities.

China's first attempt to claim leadership among the developing countries in global environmental affairs was the Ministerial Conference of Developing Countries on Environment and Development held in June 1991.¹⁰⁰ This conference attracted participants from 41 developing countries, nine developed countries, and 10 international organizations.¹⁰¹ It was one of the three conferences that the developing countries convened before the 1992 UNCED.¹⁰² The major fruit of that conference was the release of the "Beijing Ministerial Declaration on Environment and Development." This declaration confirmed that developing countries should coordinate with one another and speak in one voice at the UNCED. It is viewed as a great achievement and a landmark of China's environmental diplomacy.¹⁰³ From 1991 to 1992, Beijing hosted as many as 10 international environment-related conferences to expand its influence in global environmental politics.¹⁰⁴

The climate change issue which was raised to a political level in this phase demonstrated China's increasingly active role in global environmental politics. Climate change was a topic largely restricted in the scientific field during the 1980s. With the efforts of scientists and environmentalists, it gradually attracted attention from the political stage. To "provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation,"¹⁰⁵ the Intergovernmental Panel on Climate Change was set in 1988 and China attended its first plenary. This attendance promoted the study on climate change and the establishment of relevant agencies in China. In 1989, China established the National Climate Change Coordination Group led by the Environmental Protection

100 Richard Edmonds, The evolution of environmental policy in the People's Republic of China, *Journal of Current Chinese Affairs*, Vol. 40, Iss. 3, 2011, pp. 13–35.

101 Cai Shouqiu and Mark Voigts, The development of China's environmental diplomacy, *Pacific Rim Law & Policy Journal*, Vol. 3, 1993, pp. 17–42.

102 The other two conferences are New Delhi Conference of Selected Developing Countries on Global Environmental Issues held in April 1990, and the Ministerial Conference on Environment and Development in Asia and the Pacific held in October 1990, Bangkok.

103 Wang Zhijia, *中国环境外交 (上)* (*Zhongguo Huanjing Waijiao (Shang); China Environmental Diplomacy (I)*), 中国环境科学出版社 (Zhongguo Huanjing Kexue Chubanshe; China Environmental Science Press), Beijing, 1999, p. 142.

104 Hyung-Kwon Jeon and Seong-Suk Yoon, From international linkages to internal divisions in China: The political response to climate change negotiations, *Asian Survey*, Vol. 46, No. 6, 2006, pp. 846–866.

105 Intergovernmental Panel on Climate Change, *IPCC Factsheet: What is the IPCC?*, See: http://www.ipcc.ch/news_and_events/docs/factsheets/FS_what_ipcc.pdf.

Committee as its first official agency dealing with climate change. In 1993, China ratified the UNFCCC and became one of the first developing countries to do so.¹⁰⁶

Since the adoption of the UNFCCC, the parties have been meeting regularly to discuss possible decisions and measures to promote its implementation. During these serial negotiations, by taking advantage of the power produced by its alliance with the G77, China repeatedly emphasizes the historical contribution of the developed countries to global warming, urges the developed to provide financial and technological aid to the developing countries, and rejects any attempt of the developed to drag China into the efforts of carbon reduction. Beyond the China/G77, China and another three big developing countries—Brazil, South Africa and India organized the so-called BASIC Group (or BASIC). It was firstly mandated to coordinate their positions at COP15 in 2009 and finally developed into a regular dialogue institution.

To better implement its environmental diplomacy, China reformed its domestic bureaucratic system and more clearly elaborated its positions on governing global environmental issues. In 1992, China established the China Council for International Cooperation on Environment and Development. By gathering a body of high-level Chinese and international figures and experts, it is expected to provide intellectual support for China's environmental governance and diplomacy. Building on the Office for Foreign Affairs set in 1988, the Department of International Cooperation was established in 1993 to take charge of China's environmental diplomacy. In 1999, China issued its first guiding document on environmental diplomacy—The Outline for International Environmental Cooperation (1999–2002). In this document, China is required to take a more active attitude towards environmental diplomacy to protect its national interests; strength its international cooperation in economy and technology to promote the governance of environmental pollution; strengthen the construction of institutions of international environmental diplomacy and other matters, such as research and propaganda of environmental diplomacy, and information exchange.¹⁰⁷

106 Qi Ye, Ma Li and Zhang Lingyun, Climate Change Governance in China: A Case Study, *China Population, Resources and Environment*, Vol. 17, Iss. 2, 2007, pp. 8–12. See also: Hyung-Kwon Jeon and Seong-Suk Yoon, From international linkages to internal divisions in China: The political response to climate change negotiations, *Asian Survey*, Vol. 46, No. 6, 2006, pp. 846–866.

107 全国环境保护国际合作工作（1999–2002）纲要（Quanguo Huanjing Baohu Guoji Hezuo Gongzuo (1999–2002) Gangyao; The Outline for International Environmental Cooperation (1999–2002)), 28/09/1999, See: http://www.mep.gov.cn/gkml/zj/wj/200910/t20091022_171938.htm.

2.3 Phase III: 2009–Present

During the around two decades from 1991 to 2008, China had been largely spared the obligation to contain global warming. However, due to China's continuously rapid economic growth, and thus consumption of energy (among which, coal has always been taking the lion share), China's GHG emissions saw a sharp rise and finally took over the US and became the No.1 GHG emitter in 2006.¹⁰⁸ What is more alarming for China and the whole world is that its carbon emission is estimated to keep rising at a speed of 2.2 percent annually, which is higher than any other major emitters—except India (2.3 percent). This makes China very likely to account for one-third of the world's carbon emissions by 2040.¹⁰⁹ It is clear that without the active participation of China, the world's efforts to fight against global warming are doomed to fail.

In October 2009, two months before the COP 15, the then Chinese Premier Wen Jiabao declared that China would reduce carbon emissions per unit of GDP by 40–45 percent by 2020, relative to the level of 2005. Although this plan was criticized as nothing more than “business as usual,”¹¹⁰ it is China's first voluntary commitment to control its carbon emission. After 2009, China still adheres to the principle of “common but differentiated responsibilities,” but it began to set a series of GHG emission reduction targets. Today, China's major targets on climate change towards 2020 include: 1) reduce the carbon emissions per unit of GDP by 40–45 percent by 2020 relative to the level of 2005; 2) control the total primary energy consumption at around 4.8 billion TCE; 3) increase the mix of non-fossil energy in the consumption of primary energy to 15 percent and decrease the share of coal consumption to 62 percent; 4) increase the forest area by 40 million hectares and forest stock volume by 1.3 billion cubic meters from the 2005 levels.¹¹¹

108 Netherlands Environmental Assessment Agency, China now no. 1 in CO₂ emissions, USA in second position, June 19, 2007, See: <http://www.pbl.nl/en/news/pressreleases/2007/20070619Chinanowno1inCO2emissionsUSAinsecondposition>.

109 U.S. Energy Information Administration, *Annual Energy Outlook 2013-with projection to 2040*, See: [https://www.eia.gov/outlooks/aeo/pdf/0383\(2013\).pdf](https://www.eia.gov/outlooks/aeo/pdf/0383(2013).pdf).

110 Emma Graham-Harrison, Fear of low China target casts cloud over climate talks, *Reuters*, November 26, 2009, See: <http://uk.reuters.com/article/2009/11/26/us-china-climate-target-idUKTRE5AP0QO20091126>.

111 National Development and Reform Commission, 国家应对气候变化规划 [Guojia Yingdui Qihou Bianhua Guihua (2014–2020); China's National Plan on Climate Change (2014–2020)], September 2014; SCIO briefing on climate change, *China.org.cn*, September 19, 2014, See: http://china.org.cn/china/2014-09/19/content_33560895.htm.

The Paris Conference held in 2015, provides the other strong evidence on China's increasingly proactive role in climate change. As the world's largest GHG emitter, China contributed remarkably to reach the Paris Agreement. At the Beijing Asia-Pacific Economic Cooperation Summit held in November 2014, a breakthrough on climate change was made between China and the US, and China promised to peak its CO₂ emissions around 2030 and to make best efforts to peak early. It also promised to increase the share of non-fossil fuels in its primary energy consumption to around 20 percent by 2030. This makes China the only developing country that sets a target year to peak carbon emission.¹¹² The joint endeavors by China and the US is regarded as one of the key factors that resulted in the Paris success.¹¹³ In June 2015, China submitted the “Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions” to the UN. In this document, China declares that it will reduce CO₂ emissions per unit of GDP by 60–65 percent from the 2005 level, and increase the forest stock volume by around 4.5 billion cubic meters on the 2005 level.¹¹⁴ What is also remarkable is that China promised to contribute 20 billion RMB (around 3.1 billion USD, and equivalent to the US contribution—three billion USD) in September 2015, to set up the China South-South Climate Cooperation Fund to support other developing countries to combat climate change.¹¹⁵ On 30 November, 2015, the Paris Conference was convened and the Chinese President attended the COP conference and delivered an address for the first time.¹¹⁶ The Paris Agreement was welcomed by China, and described by Xie Zhenhua—the senior Chinese climate change negotiator—as “fair and just, comprehensive and balanced, highly ambitious, enduring and effective.”¹¹⁷ At this

112 Ding Jinguang, 巴黎气候变化大会与中国的贡献 (Bali Qihou Bianhua Dahui yu Zhongguo de Gongxain; The Paris Conference and Chinese Contribution), *China.com.cn*, 03/03/2016, See: http://news.china.com.cn/world/2016-03/03/content_37926356.htm.

113 Radoslav Dimitrov, The Paris Agreement on Climate Change: Behind Closed Doors, *Global Environmental Politics*, Vol. 16, No. 3, 2016, pp. 1–11.

114 Department of Climate Change, National Development and Reform Commission of China, Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions, 30/06/2015, See: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/China/1/China's%20INDC%20-%20on%2030%20June%202015.pdf>.

115 U.S.-China Joint Presidential Statement on Climate Change, 25/09/2015, See: <https://www.whitehouse.gov/the-press-office/2015/09/25/us-china-joint-presidential-statement-climate-change>.

116 Ding Jinguang, 巴黎气候变化大会与中国的贡献 (Bali Qihou Bianhua Dahui yu Zhongguo de Gongxain; The Paris Conference and Chinese Contribution), *China.com.cn*, 03/03/2016, See: http://news.china.com.cn/world/2016-03/03/content_37926356.htm.

117 Coral Davenport, Nations Approve Landmark Climate Accord in Paris, *The New York Times*, 12 December 2015, See: <https://www.nytimes.com/2015/12/13/world/europe/climate-change-accord->

conference, China was increasingly viewed by parties as a leader, with the recognition of 54 percent. Although behind the US (59 percent), it was the highest percentage since 2008 COP 14.¹¹⁸ In September 2016, China ratified the Paris Agreement.

An overview of the evolution of China's environmental diplomacy reveals China's transforming role from a limited participant, to an active one and finally to a proactive and responsible participant. Today, for China, environment has been a significant part of its foreign relations, while for the world, China's has been one of the key contributors and thus the most critical solution of a number of environmental issues, particularly climate change.

3. China's Roles and Motives in Global Environmental Politics

As discussed above, China has been increasingly proactive in environmental politics. In this section, recognizing the particular significance of climate change, I further discuss China's policy in climate change. Based on that, I analyze China's role and motives in climate change and in global environmental politics—to a broader sense.

China's involvement in climate change politics can be traced back to 1988 when China attended the General Assembly of the Intergovernmental Panel on Climate Change. During the first few years of global climate change negotiation, China's attitude could hardly be described as active. As a developing country, due to its low carbon emission (both in total and in per capita), China was away from the center of climate change politics. The then battle of distributing reduction responsibilities was among the developed, particularly between the EU and the US. China emphasized the contribution of the developed countries to global warming, and "viewed climate change and its mitigation as something that developed countries were responsible for and should

paris.html?_r=0.

118 Charles Parker, Christer Karlsson and Mattias Hjerpe, Assessing the European Union's global climate change leadership: from Copenhagen to the Paris Agreement, *Journal of European Integration*, Vol. 39, Iss. 2, 2017, pp. 239–252.

therefore solve.”¹¹⁹

The National Climate Change Coordination Group was replaced by the National Climate Change Response and Coordination Group in 1998, while the administration of daily work was transferred from the China Meteorological Administration to the more powerful NDRC. This marked “a strong signal that climate change was seen as a development problem and not simply an environment issue.”¹²⁰ After Hu Jintao and Wen Jiabao went into Zhongnanhai in 2003, the importance China attached to environment, and thus climate change, increased rapidly. In 2007, China established the National Leading Group to Address Climate Change, which was chaired by the Premier of State Council. Also in 2007, China released the National Climate Change Programme and made climate change a national policy issue.¹²¹ In parallel with these measures, a series of reduction targets were also set.¹²² These measures to control the rising GHG emissions are viewed as “the strictest in the world and its enforcement is the strongest.”¹²³

Since the last decade, China's critical role in fighting against climate change has been widely recognized. This is due to four-fold reasons, including China's sheer size of GHG emissions, its political influence to the developing countries,¹²⁴ its potential model role to the rest of the world in carbon emissions reduction,¹²⁵ and its influence to the participation of the US as it has been singled out by the US as a key player.¹²⁶ Although China has become increasingly flexible and cooperative in international climate change negotiations,¹²⁷ the major stance of China has remained steady. It

119 David King et al., *The Response of China, India and Brazil to Climate Change: A perspective for South Africa*, Smith School of Enterprise and the Environment, University of Oxford, November 2012, p. 45.

120 Zhang Haibin, *China and international climate change negotiations*, *WeltTrends Online-Dossier*, March 2013, See: http://welttrends.de/res/uploads/Zhang_China-and-International-climate-change-negotiations.pdf.

121 Iselin Stensdal, *China's Climate-Change Policy 1988–2011: From Zero to Hero?*, *FNI Report 9/2012*.
122 See this thesis: pp. 113–114.

123 Xue Jin Jun and Xuan Xiao Wei, *China's Green Low-Carbon Development*, in Xue Jinjun et al., (eds.), *Green Low-Carbon Development in China*, Springer Science & Business Media, 2013, p. 13.

124 Ida Bjørkum, *China in the international politics of climate change*, FNI report 12/2005.

125 Paul Harris, *Peace, security and global climate change: The vital role of China*, *Global Change, Peace & Security*, Vol. 23, Iss. 2, 2011, pp. 141–145.

126 Wei Liang, *Changing Climate? China's New Interest in Global Climate Change Negotiations*, in Joel Jay Kassiola and Su Jianguo (eds.), *China's Environmental Crisis Domestic And Global Political Impacts And Responses*, Palgrave Macmillan, 2010, p. 62.

127 Zhang Haibin, *China and international climate change negotiations*, *WeltTrends Online-Dossier*, March 2013, See: http://welttrends.de/res/uploads/Zhang_China-and-International-climate-change-negotiations.pdf.

repeatedly emphasizes the following three points.

To the responsibilities of China; China highlights that it is still a developing country with a large number of people living below the poverty line. China frequently reminds the world that it is under a heavy pressure to keep its economy growing. Besides, it holds the shield of its comparatively lower (although rising rapidly) per capita carbon emissions and opposes any effort from the developed countries to its acceptance of a binding reduction target.

To the responsibilities of the developed countries; China insists that the accumulated concentration of GHGs attribute to the developed countries should be blamed for the warmer climate. Therefore, China believes that it is the developed countries that should contribute more and lead the efforts to tackle climate change. China differentiates “luxury emissions” from “survival emissions,” and argues that the developed countries ought to adjust their consumption patterns and lifestyles to allow the developing countries to feed their populations.¹²⁸

To the relations between China and the developed countries in dealing with climate change; China insists that the developing countries, including China, are more vulnerable to climate change than the developed. It argues that as the developed countries have greater financial capacity and more advanced technologies, they have the obligation to assist the third-world countries to mitigate and adapt to climate change and reach their GHG reduction targets.¹²⁹

Like the other states, China’s involvement in climate change politics is a consequence

negotiations.pdf.

128 Gørild Heggelund, China’s climate change policy: domestic and international developments, *Asian Perspective*, Vol. 31, No. 2, 2007, pp. 155–191.

129 However, China’s approach to climate change politics has been confusing to observers. On one hand, China is resolutely rejecting a binding reduction target, on the other, it is taking strict measures to control its carbon emission domestically; on one hand, it is still unwilling to take the leadership of carbon emissions reduction, on the other, it is expanding its allies and influence in climate change negotiations. Different words have been applied to describe China’s position in global climate change politics, such as cautious and paradoxical. The popular interpretations on this topic are focusing on either China’s priority of economic growth or its skepticism to international climate change regimes. See: Imme Scholz, Climate Change: China and India as Contributors to Problems and Solutions, in Hubert Schmitz and Dirk Messner (eds.) *Poor and Powerful—The Rise of China and India and its Implications for Europe*, Bonn: Deutsches Institut für Entwicklungspolitik, 2008, pp. 40–54; Phillip Stalley, Forum: Principled Strategy: The Role of Equity Norms in China’s Climate Change Diplomacy, *Global Environmental Politics*, Vol. 13, No. 1, 2013, pp. 1–8; Chen Gang, *China’s Climate Policy (China Policy Series)*, New York: Routledge, 2012; Lynette Ong, The Apparent “Paradox” in China’s Climate Policies, *Asian Survey*, Vol. 52, No. 6, 2012, pp. 1138–1160; Stephen Junor, China’s Climate Change Paradox, *The Diplomat*, September 30, 2014, See: <http://thediplomat.com/2014/09/chinas-climate-change-paradox/>.

of a careful calculation of national interests. China recognizes the potential damage of climate change to it and believes that its participation of dealing with global warming can help control the damage. Also, by actively collaborating with the international community, China can enhance its ability to adapt and mitigate climate change. In addition, by participating the international climate change negotiations regime which it has actively contributed to set up, China can not only build an image of a “responsibility stakeholder” in climate change politics and ensure its leadership of the developing world, but also earn more time for its economic growth by underlining the historical responsibility of the developed world, including the EU.¹³⁰

As reflected by China's behaviors in climate change negotiations, its environmental diplomacy is also motivated by realist considerations. In the eyes of Zhang Haibin, the targets of China's environmental diplomacy are at least four-fold: 1) striving for foreign financial and technological aid, promoting China's environmental protection and sustainable development; 2) strengthening the international cooperation in environment and development, and guaranteeing the security of global environment; 3) protecting the interests of China and the developing world; 4) establishing China's position as a key player in international environmental and development affairs.¹³¹ Jerry McBeath and Wang Bo identify five aspects where China's environmental diplomacy serves its national interests: attracting foreign economic assistance, building institutional and human capacity, insuring domestic political stability, curbing unsustainable economic growth, and enhancing China's international reputation.¹³² In addition, Elizabeth Economy argues that “China's environmental policy has sought to further several goals: protect Chinese sovereignty, acquire foreign aid and technical assistance, and promote China's economic development.”¹³³

130 Bo Yan and Chen Zhimin, 全球气候变化治理中的中国和欧盟 (Quanqiu Qihou Bianhua Zhili Zhong de Zhongguo he Oumeng; China and the EU in Global Climate Change Governance), *现代国际关系* (*Xiandai Guoji Guanxi; Contemporary International Relations*), Iss. 2, 2009, pp. 44–50.

131 Zhang Haibin, 中国环境外交初探 (Zhongguo Huanjing Waijiao Chutan; A Primary Study on China's Environmental Diplomacy), *北京大学学报 (哲学社会科学版)* (*Beijing Daxue Xuebao (Zhaxue Shehui Kexue Ban); Journal of Peking University (Philosophy And Social Sciences)*), Vol. 5, 1993, pp. 37–43; Zhang Haibin, 中国环境外交的演变 (Zhongguo Huanjing Waijiao de Yanbian; The evolution of China's Environmental Diplomacy), *世界经济与政治* (*Shijie Jingji yu Zhengzhi; World Economic and Politics*), Iss. 11, 1998, pp. 12–15.

132 Jerry McBeath and Bo Wang, China's Environmental Diplomacy, *American Journal of Chinese Studies*, Vol. 15, No.1, 2007, pp. 1–16.

133 Elizabeth Economy, China's Environmental Diplomacy, in Samuel Kim (ed.), *China and the World:*

Recognizing these perspectives, the foreign-policy perspective should also be emphasized. For China, environment as a diplomatic topic has its unique advantages. On one hand, it is not as controversial as other topics in IR, such as security, human rights, and arms control. On the other hand, it is sensitive enough for developing countries, which ensures ample willing of the developing world to get involved in this field.¹³⁴ This is first demonstrated by China's participations to the UNCHE in 1972. As has been revealed in the previous section, the background that China attended the UNCHE was that the People's Republic of China (PRC) was newly accepted by the UN and was eagerly to show itself in world affairs, and the opening of the conference offered China an excellent opportunity.

The 1989 Tiananmen incident incurred sanctions from the western countries and produced heavy diplomatic pressure to China. In the few years after 1989, China gradually confirmed its principle of foreign policy: keeping a low profile while trying to accomplish something (韬光养晦, 有所作为 Taoguang Yanghui, Yousuo Zuowei), to avoid serious conflicts against the western powers. Against this backdrop, environment as a topic which is not very politically sensitive could help China fix its relations with the rest of the world. After June 1989, China first sent its minister of environmental protection to pay a visit to Europe, and then hosted around a dozen international conferences relevant to the environment. In 1992, China successfully regained acceptance after its post-Tiananmen international malaise by using the opportunity of the UNCED.¹³⁵ From the late 1980s onward, environment—particular climate change has been gradually rising in international politics. China recognized the world's growing concern on this topic and recognized that an active role could help it win a positive reputation. Actually, "much of China's activism in early periods has tended to aim at improving its image as a responsible major power in the international

Chinese foreign policy faces the new millennium, Westview Press, 1998, p. 264.

134 John Ntambirweki, The Developing Countries in the Evolution of an International Environmental Law, *Hasting International and Comparative Law Review*, Vol. 14, 1991, pp. 849–903, cited in Cai Shouqiu and Mark Voigts, The development of China's environmental diplomacy, *Pacific Rim Law & Policy Journal*, Vol. 3, 1993, pp. 17–42.

135 Harrington Jonathan, Panda Diplomacy: State Environmentalism, International Relations and Chinese Foreign Policy, in Paul Harris (ed.), *Confronting Environmental Change in East and Southeast Asia: Eco-politics, Foreign Policy, and Sustainable Development*, Tokyo: United Nations University Press, 2005, pp. 102–118, cited in Richard Edmonds, The evolution of environmental policy in the People's Republic of China, *Journal of Current Chinese Affairs*, Vol. 40, Iss. 3, 2011, pp. 13–35.

environmental area.”¹³⁶ Therefore, it is arguably that China's environmental diplomacy also serves as a probe to assist China in breaking diplomatic grounds.

It was in the chaos of Cultural Revolution that China attended the UNCHE in 1972, and triggered its march of environmental protection and diplomacy. Since then, although China has been exerting efforts to protect the environment, its environment has been deteriorating. In the course of the history of China's environmental policymaking, its involvement in the international environmental politics has been increasingly deeper, which benefited China's domestic environmental protection efforts. The conceptions and technologies that China introduced from the outside world played a significant role in China's environmental protection. Today, China is attaching unprecedented importance to environmental protection under Xi Jinping's rule. In the arena of global environmental politics, China is also becoming more willing to take responsibilities. However, China's more active and cooperative posture expects echo from the rest. It requires the other big players, including the EU, to take more responsibility and provide more financial and technological assistance to China.

136 Hyung-Kwon Jeon and Seong-Suk Yoon, From international linkages to internal divisions in China: The political response to climate change negotiations, *Asian Survey*, Vol. 46, No. 6, 2006, p. 852.

**Part III. Institutions in EU-China Environmental
Cooperation and the Case Study**

Chapter V. Institutions in EU-China Environmental Cooperation

Three years before the establishment of their diplomatic relationship in 1975, the EU and China both attended the UNCHE, which encouraged the prioritization of the environment on their respective agendas. However, during the first few years of their interaction, the economy and trade were the main concerns for the two parties. It was not until 1981 that EU and Chinese officials met one another for the first time, and commenced an exploration of environmental issues as an area for cooperation. During the 1980s and early 1990s, the EU-China environmental relationship was still in its infancy, and involved in the general EU-China economic cooperation. In 1994, the EU and China began to establish institutions to promote environmental cooperation between them. As a result of this, today, many multi-level institutions are in existence, and numerous cooperation projects have been implemented.

The remainder of this chapter is organized as follows: the first section analyses the evolution of EU-China environmental cooperation. Based on an institutionalist point of view, I separate the evolution of EU-China environmental cooperation into three phases: 1981–1993, 1994–2004, and 2005 to the present. The second section discusses the environment in the ASEM and the ECAS, which are recognized as interregional institutions. Due to the particular significance of the ECAS in EU-China relations, it is detailed at some length. In section three, I apply lessons from environmental policy, environmental technology, and climate change to analyze the sectoral institutional architecture in EU-China cooperation (the role of institutions in EU-China energy cooperation is deferred to the following chapter). Based on these analyses, the roles and limits of institutions in EU-China environmental cooperation are primarily explored in section four.

1. The Evolution of EU-China Environmental Cooperation

The environment as an area for cooperation between the EU and China relations can be traced back to 1981. In that year, a delegation of EC DG ENER visited China. This is the earliest record of contact between the EU and China with regard to environmental matters.¹ The relationship has evolved steadily since then. Furthermore, now that this environmental cooperation has been established, it has become a particularly useful strategic key for strengthening these relations.²

In this section, from an institutionalist point of view, I divide the evolution of EU-China environmental cooperation into three phases. The first phase encompasses the years from 1981 to 1993. In this phase, the EU and China commenced to discuss the environment in bilateral relations, and explored the potential for cooperation in this field. However, their cooperation on environmental matters was largely *ad hoc* and on a very small scale. The second phase ranges from 1994 to 2004. That decade witnessed substantial developments in environmental cooperation between the parties, and institutions such as the Energy Conference and the EU-China Ministerial Environmental Policy Dialogue were established, and began to function to promote EU-China cooperation on environmental issues. In addition, ASEM and the ECAS as interregional

1 Communication of the Commission 1995, *A long term policy for China-Europe relations*, COM (95) 279 final, 5 July 1995, p. 41, See: http://www.eeas.europa.eu/archives/docs/china/docs/com95_279_en.pdf; Zha Daojiong and Lai Suet Yi, China-EU Energy Governance: What Lessons to be Drawn? in Michèle Knodt, Nadine Piefer and Franziska Müller (eds.), *Challenges of European External Energy Governance with Emerging Powers*, Ashgate Publishing, 2015, p. 135; Ministry of Science and Technology, 中国—欧盟科技合作暨 2002 中欧信息社会合作论坛的情况介绍 (Zhongguo—Oumeng Keji Hezuo ji 2002 Zhongou Xixi Shehui Hezuo Luntan de Qingkuang Jieshao; An Introduction of the China-EU S&T Cooperation and the 2002 China-EU Forum on Information Society Cooperation), *China.com.cn*, 11/04/2002, See: <http://www.china.com.cn/ch-xinwen/content/news201.htm>; Ministry of Foreign Affairs, 中国同欧盟的关系 (*Zhongguo tong Oumeng de Guanxi, China-EU Relations*), See: http://www.fmprc.gov.cn/web/gjhdq_676201/gj_676203/oz_678770/1206_679930/sbgx_679934/, last renewed January, 2017; 中国—欧盟科技合作回顾与展望 (Zhongguo—Oumeng Keji Hezuo Huigu yu Zhanwang; Review and Outlook of the China-EU S&T Cooperation), *科技日报 (Keji Ribao; Science and Technology Daily)*, 15 November, 2000. Studies usually take the opening of the first EU-China energy conference in 1994 as the beginning of EU-China environmental cooperation. This argument is apparently based on an institutionalist point of view. The author agrees that the first EU-China energy conference is of great significance in the evolution of EU-China environmental cooperation. However, I would like to trace this relationship to an earlier record and take the year of 1994 as the beginning of the second phase of EU-China environmental cooperation. Also, it is notable that this visit paid by the EC DG ENER is also viewed as the beginning of EU-China cooperation on energy and S&T.

2 David Scott, Environmental issues as a 'strategic' key in EU-China relations, *Asia Europe Journal*, Vol. 7, Iss. 2, 2009, pp. 211–224.

EU-China cooperation institutions were launched in 1996 and 1998, respectively. The environment gradually occupied a more important position in these institutions and finally became a regular concern for European and Chinese leaders. Moreover, a number of large-scale environmental projects were initiated, such as the LIEP. The years since 2005 have witnessed an efflorescence in EU-China environmental cooperation. The highlight of this new phase has been the establishment of the EU-China Climate Change Partnership. Not only has it added a new theme to their cooperation thus opening a new avenue for collaboration—but it has also established a new sectoral forum in the EU-China environmental institutional architecture, with mandates that include climate policy, low-carbon technology, and energy.

1.1 Phase I: 1981–1993

The visit of the DG ENER delegation did not result in dramatic changes to EU-China relations. The economy and trade remained the main concern for the parties, while environmental matters were marginalized and perceived as subservient to the interests of EU-China economic cooperation. In 1985, the EU and China signed the Agreement on Trade and Economic Cooperation to foster economic and trade cooperation between them. In this document, which regulated EU-China commercial and economic relations for more than thirty years,³ environmental protection was listed as a field of economic cooperation (Article 10). The main tasks of the EU-China Joint Committee established under this agreement were assigned to the field of economy and trade.⁴ In the global context in the late 1980s and early 1990s, two major global environmental issues dominated: protecting ozone layer, and climate change. However, due largely to China's minor contributions to these two issues, and the immaturity of the EU's environmental policy, neither the EU nor China had a decisive impact in these matters.

The marginal status of the environment in EU-China relations during this phase was the result of numerous factors. First, at the global level, the state of the environment had only gradually been recognized as a crucial focus in international politics. At the time, however, China was still some distance from attaining membership of elite political

3 Men Jing and Giuseppe Balducci, *Prospects and challenges for EU-China relations in the 21st century: the partnership and cooperation agreement*, Peter Lang, 2010, p. 54.

4 EEC-China Trade and Economic Cooperation Agreement, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Ar14206>, last updated: 03/05/2007.

circles. Particularly as a consequence of the tense international environment of the Cold War, and the lack of a concrete global environmental threat—such as climate change—the world’s great powers focused primarily on security issues. There was little sense of a crisis of environmental governance, and they lacked sufficient motives for environmental cooperation. Second, the EU lacked the intention and the ability to be an active—let alone a leading—participant in governing the global environment. It was not until the late 1980s and early 1990s that the EU was granted the power to enforce a single environmental policy and the ambition to lead the global environmental governance. Third, since “reform and opening up” in 1978, China had focused on the economic realm. While some progress with environmental protection was achieved during this process, much of it pertained to the drafting of environmental law and the establishment of relevant institutions. A similar assessment applies to its environmental diplomacy: China committed environmental conventions and sent large delegations to attend environmental conferences, but never assumed serious responsibilities.

1.2 Phase II: 1994–2004

In 1994, the first meeting of the EU-China Energy Conference was held in Brussels. The inauguration the EU-China Energy Conference as a forum reflect the first attempts of the EU and China to establish institutions to promote bilateral environmental cooperation, and thus mark the beginning of a new phase of EU-China environmental cooperation.

The increasing importance of environmental concerns in EU-China relations during this phase is evidenced from three considerations. First, both the EU and China recognized the significance of the environment in bilateral relations. The first indication of progress in this regard is documented in the EU’s first policy paper on China issued in 1995. In that paper, *A Long-term Policy for China-Europe Relations*, the EU recognized that “the consequences for the environment of such a huge country [China] reaching western levels of consumption, and pollution, in the future are impossible to ignore.”⁵ It also declared: “we should promote exchanges of information on the environment between the Commission, the Member States and China; and improve communication with other

5 Communication of the Commission 1995, *A long term policy for China-Europe relations*, COM (95) 279 final, 5 July 1995, See: http://www.eeas.europa.eu/archives/docs/china/docs/com95_279_en.pdf.

organizations helping China to improve its environment.”⁶ China’s EU Policy Paper—its first—was published in 2003. In it, environmental issues were subsumed as a subtopic under “The Economic Aspect,” along with economic cooperation and trade, financial cooperation, and energy cooperation, among others. In addition, the policy paper noted five already-existing areas for EU-China environmental cooperation: environmental legislation and management, climate change, bio-diversity protection, bio-safety management, and trade and environment.⁷

Second, the environment became a theme in the most prominent EU-China cooperation institutions, and new environmental institutions were established in this period. In 1996, the ASEM was initiated, and two years later, the two sides initiated the ECAS. However, in their first summit, environmental issues were not discussed by the principals. It was not until the second annual summit in 1999 that the term “environment” was added into their joint statement.⁸ In subsequent years, environmental matters have become increasingly important in this forum. Thanks to the ECAS, the EU-China Ministerial Environmental Policy Dialogue was initiated in 2003. This has become the most important platform for communication between European and Chinese environmental policy makers.⁹

In addition to mutual recognition of environmental concerns in bilateral relations and the establishment of environmental institutions, the EU and China also commenced to implement a number of environmental governance programmes. In 1999, they commenced to implement the LIEP. They invested EUR 48.5 million (with EUR 36.5 million coming from the EU) to support “environmental planning, management and enforcement capacities in the province, and encouraged cleaner production, waste minimisation and recycling.”¹⁰ The LIEP consisted of seven sub-projects: environmental awareness, urban planning, water resource management, air quality management and capability construction, energy management, clean production,

6 *Ibid.*

7 China’s EU Policy Paper, See: http://en.people.cn/200310/13/eng20031013_125906.shtml, last updated: October 13, 2003.

8 Second EU-China Summit, 1999: Press Statement of the EU, in Francis Snyder (ed.), *The European Union and China, 1949-2008: Basic Documents and Commentary*, Hart Publishing, 2009, pp. 670-671. This document is also available from: Previous five summits in review, *Xinhuanet*, See: http://news.xinhuanet.com/english/2003-10/30/content_1151166.htm.

9 A detailed discussion of the EU-China environmental policy dialogue, please refer to pp. 135–136.

10 EC, *Working with China on the environment—The role of the European Commission*, Luxembourg: Office for Official Publications of the European Communities, 2009, p. 10.

adjustment of industrial structure and promotion of investment.¹¹ In addition to the LIEP, the EU and China also implemented a number of other large-scale projects, such as the Environmental Management Cooperation Programme, the Natural Forest Management Programme, and the Energy and Environment Programme (EEP).

With a budget of EUR 18.9 million (of which EUR 13 million was contributed by the EU), the Environmental Management Cooperation Programme was structured around demonstration projects in seven model communities, and provided assistance to selected pilot cities with solving key environmental management and urban development issues. By working with decision makers, local governments and Chinese and foreign-owned industries, the program aimed to contribute to developing and improving environmental management and sustainable development capacities in China.¹² The Natural Forest Management Programme was launched in 2003 and concluded in 2010. It attracted EUR 16.9 million from the EU, and implemented its major activities in six counties, 11 townships and 58 administrative villages in three Chinese provinces (Hainan, Hunan, and Sichuan). It had three main components: a natural forest management component, a community development component, and an information training and dissemination component.¹³ The EEP (2003–2009) was jointly launched by the Chinese NDRC and the delegation of the EC. With financial support of EUR 42.9 million (with EUR 20.0 million coming from the EU), this program aimed to “contribute to sustainable energy production and consumption, improve energy security, and support the EU-China policy dialogue on energy and climate change.”¹⁴ It involved four main components: energy policy development, energy efficiency, renewable energy, and natural gas, and was finally absorbed into the EU-China Climate Change Partnership.¹⁵

1.3 Phase III: 2005–Present

By 2004, EU-China environmental cooperation had achieved substantial results after

11 Ding Dong, 欧盟—中国辽宁综合环境项目进展顺利 (Oumeng-Zhongguo Liaoning Zonghe Huanjing Xiangmu Jinzhan Shunli; The EU-China Liaoning Integrated Environment Programme is proceeding smoothly), 27/12/2003, See: http://www.mep.gov.cn/hjyw/200312/t20031227_87724.htm.

12 EC, *Working with China on the environment—The role of the European Commission*, Luxembourg: Office for Official Publications of the European Communities, 2009, pp. 11–12.

13 *Ibid*; See also: EU-China Natural Forest Management Project, <http://eeas.europa.eu/delegations/china/documents/projects/nfmp.pdf>.

14 *Ibid*. p. 14.

15 *Ibid*; See also: EU-China energy and environment program launched, *Xinhuanet*, 04/11/2004, http://www.chinadaily.com.cn/english/doc/2004-11/04/content_388294.htm.

steady development over more than two decades. In 2005, at their eighth annual summit, the EU and China established the EU-China Climate Change Partnership. The establishment of the partnership has led the EU-China environmental relationship to a new era for three reasons. First, it has helped enhance the status of climate change in EU-China relations. Although climate change had been a concern for EU and Chinese leaders, before the establishment of the partnership, there was no formal institution to support cooperation in this field. Within the framework of the partnership, the EU and China have begun to cooperate on energy and technologies for tackling climate change, such as clean coal and carbon capture and storage (CCS). Second, it has enriched the institutional architecture of the EU-China environmental relationship: integrating climate change into the EU-China environmental institutional framework has helped to elaborate this architecture. Third, and more symbolically, the establishment of the EU-China Climate Change Partnership has added an international dimension to EU-China environmental cooperation: it indicates that the EU and China have begun to include global environmental issues in their bilateral environmental cooperation.

In the last over three decades, EU-China environmental cooperation has developed steadily. Though the EU and China had been attempting to introduce environmental concerns into their relations, in the first phase of their collaboration advances were insubstantial. Progress in EU-China environmental cooperation was recorded after 1994. With the increasing importance of the environment in their respective political agendas, the parties have also assigned greater prominence to their environmental relations. In the second phase, a number of environmental institutions were established and a series of environmental projects were implemented. Building on the achievements made in over two decades, the EU and China have been cooperating to deepen and widen the relationship since 2005. With the establishment of the EU-China Climate Change Partnership, they have developed a new sphere of collaboration, and have brought their environmental cooperation to the global level.

2. Environment in the ASEM and the ECAS

The institutional framework of EU-China environmental cooperation is an integral part

of the general institutional framework of EU-China relations, and the ASEM and ECAS are the two most important interregional institutions they are involved in.

2.1 The ASEM and the ECAS as Interregional Institutions

In consideration of both the fact that the EU is not a sovereign state, and the roles of the ASEM and ECAS in EU-China relations, it is important to commence with an examination of the process of interregionalism and its theoretical study.

Although the emergence of interregional relations can be traced back to the 1960s and 1970s, the study of interregionalism in IR did not emerge until the mid-1990s.¹⁶ That is, the study of interregionalism is still in its infancy, which has led to lack of agreement among researchers in the field. As an example, consider definitions of interregionalism from different theorists. Ralf Roloff defines interregionalism as “a process of widening and deepening political, economic, and societal interactions between international regions.”¹⁷ Julie Gilson sees interregionalism as a “double regional project, responding to the need to pool an even greater percentage of resources in recognition of other interregional and global dynamics.”¹⁸ Meanwhile, Zhu Tianxiang describes interregionalism as “institutionalized dialogues and cooperation, conducted by national states and regional organizations.”¹⁹

Although there is not agreement on the definition of interregionalism, it is widely accepted that at least three forms of interregionalism can be identified, though scholars occasionally apply different terms in similar cases. For example, Heiner Hänggi categorizes three forms of interregionalism: relations between regional groupings; biregional and transregional arrangements; and hybrids such as relations between

16 Jürgen Rüländ, Balancers, multilateral utilities or regional identity builders? International relations and the study of interregionalism, *Journal of European Public Policy*, Vol. 17, Iss. 8, 2010, pp. 1271–1283; Yeo Lay Hwee, Regionalism and Interregionalism in ASEM, in Yeo Lay Hwee and Lluc López i Vidal, *Regionalism and Interregionalism in the ASEM context: Current Dynamics and Theoretical Approaches*, Documentos CIDOB, Número 23, p. 9.

17 Europa, Amerika und Asien zwischen Globalisierung und Regionalisierung: das interregionale Konzert und die ökonomische Dimension internationaler Politik, Paderborn: Ferdinand Schöningh, p. 20, cited from Ralf Roloff, *Interregionalism in theoretical perspective: State of the art*, in Heiner Hänggi, Ralf Roloff and Jürgen Rüländ (eds.), *Interregionalism and International Relations*, Routledge, 2006, p. 18.

18 Julie Gilson, New Interregionalism? The EU and East Asia, *Journal of European Integration*, Vol. 27, Iss. 3, 2005, p. 309.

19 Zhu Tianxiang, 地区间主义研究：成就与缺失 (Diqujian Zhuyi Yanjiu: Chengjiu yu Queshi, Research on Interregionalism: Achievements and Shortcomings), *当代亚太 (Dangdai Yatai; Journal of Contemporary Asia-Pacific Studies)*, Iss. 6, 2010, p. 12.

regional groupings and single powers.²⁰ Summarizing the studies in this field, Jürgen Rüländ argues that three patterns of interregionalism can be recognized, namely biregionalism; transregionalism; and hybrid interregionalism. According to Jürgen Rüländ, biregionalism “denotes group-to-group dialogues organized in a hub-and-spokes relationship mainly around the EU.”²¹ Examples of this pattern of interregionalism include dialogues of the EU with the Association of Southeast Asian Nations, the Mercosur, the South African Development Community or the ASEAN–Mercosur dialogues.²² Transregionalism “denotes a dialogue process with a more diffuse membership, which does not necessarily only include regional organizations but also member states from more than two regions.”²³ The Asia-Pacific Economic Cooperation and the Indian Ocean Rim Association for Regional Cooperation and the ASEM fall into this category. Hybrid interregionalism (also sometimes called quasi-interregionalism) is “a residual category including inter-continental forums and strategic partnerships,”²⁴ and the ECAS can be classified here.²⁵ Heiner Hänggi argues that the typology of institutionalized interregional relations (in the wider sense) can be viewed from three perspectives: megaregional relations (groups of states from more than the two core regions); interregional relations (in the narrow sense: regional organization and regional organization, regional organization and regional group, regional group and regional group); and quasi-interregional relations (regional organization/regional group and third country). With reference to these categories, ASEM is classified as an interregional relation (in the narrow sense), more specifically in the regional organization and regional group sub-section, while the ECAS is a member of the quasi-interregional relations category.²⁶

20 Heiner Hänggi, *Interregionalism: empirical and theoretical perspectives*, Paper prepared for the workshop “Dollars, Democracy and Trade: External Influence on Economic Integration in the Americas” Los Angeles, CA, May 18, 2000.

21 Jürgen Rüländ, *Balancers, multilateral utilities or regional identity builders? International relations and the study of interregionalism*, *Journal of European Public Policy*, Vol. 17, Iss. 8, 2010, p. 1272.

22 *Ibid.* p. 1272.

23 *Ibid.* p. 1272.

24 *Ibid.* p. 1272.

25 *Ibid.* p. 1272.

26 Heiner Hänggi, *Interregionalism as a multifaceted phenomenon: In search of a typology*, in Heiner Hänggi, Ralf Roloff and Jürgen Rüländ (eds.), *Interregionalism and International Relations*, Routledge, 2006, p. 41. The forms of interregionalism are also divided into two subgroups: biregionalism (or interregional bilateralism) and transregionalism, while a similar division is applied by Yeo Lay Hwee although in different terms (pure interregionalism and “hybrid” interregionalism). See: Lluç López i Vidal, *The Theoretical Contribution of the Study of Regionalism and Interregionalism in the ASEM Process*, in

Researchers agree that interregionalism can perform a variety of positive functions in promoting interregional cooperation. According to Yeo Lay Hwee, the functions of interregionalism should be viewed from perspectives of different IR theory schools. For realists, the primary function of interregionalism is balancing; while for institutionalists, the functions include agenda-setting and rationalizing, and building institutions. Social constructivists see interregionalism as an identity-builder.²⁷ In addition to these functions, in a summary by Alfredo Robles, “stabilization” and “development” are also recognized as functions of interregionalism.²⁸

The ASEM is a representative example of interregionalism. First mooted in November 1994, the founding of this institution was a joint initiative of Singaporean and French leaders. Its mandate was to support considerations of the means of building a new partnership between Europe and Asia. This conception was realized when the first meeting of ASEM (ASEM 1)²⁹ was convened in Bangkok in March 1996. The ASEM currently brings together 53 partners, representing nearly 60 percent of the total global gross domestic product (GDP) and more than 60 percent of the world’s population.³⁰ The ASEM is an informal process of dialogue and cooperation that addresses political, economic, and cultural issues, with the objective of strengthening the relationship between Asia and Europe in the spirit of mutual respect and equal partnership. It has four characteristics: informality, multi-dimensionality, an emphasis on equal partnership, and dual focus on high-level and people-to-people interactions.³¹ It is supported by three pillars—a political pillar; an economic pillar; and a social, cultural, and educational pillar. The ASEM dialogue on environment is a component of the political

Yeo Lay Hwee and Lluc López i Vidal, *Regionalism and Interregionalism in the ASEM context: Current Dynamics and Theoretical Approaches*, Documentos CIDOB, Número 23, pp. 49–50; Yeo Lay Hwee, *Regionalism and Interregionalism in ASEM*, in Yeo Lay Hwee and Lluc López i Vidal, *Regionalism and Interregionalism in the ASEM context: Current Dynamics and Theoretical Approaches*, Documentos CIDOB, Número 23, p. 9.

27 Yeo Lay Hwee, *Regionalism and Interregionalism in ASEM*, in Yeo Lay Hwee and Lluc López i Vidal, *Regionalism and Interregionalism in the ASEM context: Current Dynamics and Theoretical Approaches*, Documentos CIDOB, Número 23, p. 9. See also: Jürgen Rüländ, *Balancers, multilateral utilities or regional identity builders? International relations and the study of interregionalism*, *Journal of European Public Policy*, Vol. 17, Iss. 8, 2010, pp. 1271–1283.

28 Alfredo Robles, *The Asia-Europe Meeting The theory and practice of interregionalism*, Routledge, 2008, p. 9.

29 From here afterwards, meetings of the ASEM are numbered in the format like ASEM 1, ASEM 2.

30 Asia-Europe Meeting (ASEM), 17/05/2016, See: https://eeas.europa.eu/headquarters/headquarters-homepage/2051/asia-europe-meeting-asem_en.

31 About the Asia-Europe Meeting (ASEM), See: <http://www.aseminfoboard.org/about>.

pillar.³²

As discussed above, like other interregional arrangements, the ASEM is mandated to support the promotion of cooperation among the European and Asian participants. However, there is no agreement on the actual value of ASEM in improving relations between the two camps and among their members. For example, Julie Gilson argues that “the strength of ASEM lies in the fact that it offers a new channel of communication with the potential to bring together state and non-state actors of two geographical regions with a history of political and economic distance.”³³ As regards the EU, the author further clarifies that ASEM is “a useful mechanism for managing relations with thirteen different economies, promoting democratic values and the pursuit of human rights among states whose record has yet to satisfy European demands, and balancing geostrategic interests in a volatile and rapidly changing region.”³⁴ Simultaneously, the Asian members employ ASEM as a means of 1) dealing collectively with the twenty-five states of the EU, 2) providing a first-hand examination of the practices of regional integration, 3) establishing a framework in which East Asia can present itself as a regional political and economic entity, and 4) realizing the “third side” in a global triangle of regional economic blocs.³⁵ However, as ASEM is inherently an informal process of dialogue and cooperation, its actual effectiveness is also questioned by researchers. As Yeo Lay Hwee contends, “ASEM is unlikely to be a key engine in propelling EU-East Asia relations and deepening the engagement.”³⁶ More gravely, it has to compete with other bilateral forums such as the ECAS.³⁷

2.2 The Environment in ASEM

The environment has been a theme since the ASEM 1. In the final chair statement—entitled “New Comprehensive Asia-Europe Partnership for Greater Growth”—following that meeting, the heads of Asian and European states declared that they “acknowledged the importance of addressing environmental issues such as global

32 ASEM InfoBoard, Political Pillar, See: <http://www.aseminfoboard.org/content/political-pillar>.

33 Julie Gilson, New Interregionalism? The EU and East Asia, *Journal of European Integration*, Vol. 27, Iss. 3, 2005, pp. 323–324.

34 *Ibid.* p. 308.

35 *Ibid.* p. 308.

36 Yeo Lay Hwee, Regionalism and Interregionalism in ASEM, in Yeo Lay Hwee and Lluc López i Vidal, Regionalism and Interregionalism in the ASEM context: Current Dynamics and Theoretical Approaches, Documentos CIDOB, Número 23, p. 24.

37 *Ibid.*

warming ... and agreed that mutually beneficial cooperation should be undertaken in this field including the transfer of environmentally sound technology to promote sustainable development.”³⁸ Following the ASEM 1, the increasing importance of the environment in global politics led to it receiving more attention from Asian and European leaders. At the ASEM 2 in 1998, an Asia-Europe Environmental Technology Centre was built in Thailand. With ASEM 6 in Helsinki in 2006, environmental matters were raised to unprecedented levels on the meeting’s agenda with the proclamation of the “Helsinki Declaration on Climate Change.” This declaration “made explicit the intention to strengthen cooperation on climate change issues.”³⁹ This intention was reaffirmed at the ASEM 7 meeting held in Beijing, where the “Beijing Declaration on Sustainable Development” was proclaimed.⁴⁰ In this section, I focus on environmental policy and energy as key areas illustrating the nature of the environmental institutions in ASEM in order to consider its lack of effectiveness in influencing EU-China environmental cooperation.

With regard to environmental policy, the ASEM has developed a number of platforms for environmental policy makers to exchange ideas and explore cooperation possibilities. At the first ASEM Environment Ministers Meeting in Beijing in July 2002, a large number of general topics were discussed. These included the promotion of environmental partnerships among ASEM members, international environmental issues, preparations for the World Summit on Sustainable Development, and options for future dialogue on environmental matters within ASEM.⁴¹ By 2012, four such meetings had been organized. Another important environmental platform at ASEM is the Asia-Europe Environment Forum (ENVforum). Launched in 2003, the ENVforum aims to “foster inter-regional cooperation between Europe and Asia on sustainable development and its environmental dimensions.”⁴² In its first 10 years, the ENVforum conducted over 50

38 New Comprehensive Asia-Europe Partnership for Greater Growth, 1st ASEM Summit (ASEM 1), Final Chair Statement, 1–2 March, 1996, See: <http://www.aseminfoboard.org/sites/default/files/documents/1996%20-%20ASEM1%20-%20Chair%20Statement.pdf>.

39 Astrid Carrapatoso, Climate policy diffusion: interregional dialogue in China-EU relations, *Global Change, Peace & Security*, Vol. 23, No. 2, 2011, p. 183.

40 *Ibid.* p. 183.

41 ASEM InfoBoard, First ASEM Environment Ministers’ Meeting (ASEM EnvMM 1), 17 January, 2002, See: <http://www.aseminfoboard.org/events/1st-asem-environment-ministers-meeting-asem-envmm1>.

42 Asia-Europe Environment Forum (ENVforum), See: [http://www.asef.org/projects/programmes/517-asia-europe-environment-forum-\(envforum\)](http://www.asef.org/projects/programmes/517-asia-europe-environment-forum-(envforum)).

high-level international meetings, roundtables, conferences and workshops and brought together over 1,200 participants from such as government, academia, and international organizations.⁴³ Since 2013, the ENVforum has been working in the area of sustainable development. Its ultimate goal is to “provide a platform for exchange between Asia and Europe on how sustainable development could be achieved,” and to “meaningfully contribute to the formulation of sound political decisions that are mindful of their environmental impact.”⁴⁴ There are also other dialogues foregrounding environmental issues within the framework of ASEM, such as ASEM Development Conference and ASEM Sustainable Development Dialogue.

As one of the broad remits of ASEM, “energy” was also cited in the chair’s statement of the ASEM 1 in 1996. It was listed together with agriculture, transport, and others as a sector that is important for strengthening economic links between the two regions.⁴⁵ At ASEM 6 in 2006, energy was described as a security issue for Asian and European countries for the first time, and thus gained increased eminence in Europe and Asia relations.⁴⁶ After that meeting, and echoing the importance Asian and European leaders attributed to it during ASEM 6, the first ASEM Forum on Energy Security Policy was organized in Vietnam in 2008. In June 2009, the ASEM partners held their first ASEM Ministerial Conference on Energy Security, with the aim of exploring an agenda for future dialogue and possible opportunities for practical cooperation in ASEM.⁴⁷ In addition to these conferences and forums, seminars and roundtable meetings were also organized. For example, the ASEM Seminar on Nuclear Safety was initiated in 2012 and had been held annually four times by 2015. The ASEM Roundtable on Green Building was launched by India in 2014, and by 2015 had been convened twice. It aims to “identify focus areas for cooperation in the green building sector among ASEM countries and to identify initiatives that need to be undertaken for increased cooperation

43 *Ibid.*

44 ENVforum 2016, Sustainable Development Goals for Asia and Europe, See: <http://www.asef.org/projects/themes/sustainable-development/3419-envforum-2016>.

45 New Comprehensive Asia-Europe Partnership for Greater Growth, 1st ASEM Summit (ASEM 1), Final Chair Statement, 1–2 March, 1996, p. 4, See: <http://www.aseminfoboard.org/sites/default/files/documents/1996%20-%20ASEM1%20-%20Chair%20Statement.pdf>.

46 Chairman’s Statement of the Sixth Asia-Europe Meeting, 10–11 September 2006, See: http://www.aseminfoboard.org/sites/default/files/documents/060911_ChairmanStatement.pdf.

47 ASEM InfoBoard, First ASEM Ministerial Conference on Energy Security, June 2009, See: <http://www.aseminfoboard.org/events/1st-asem-ministerial-conference-energy-security>.

among ASEM countries.”⁴⁸ Finally, the ASEM Seminar on Renewable Energy was hosted by Mongolia in May 2015.

Although a number of institutions have been established and dialogues initiated, it is necessary to retain the awareness that ASEM is “ultra-light,” has no funding, and is not based on hard commitments. For these reasons one should not expect results from it beyond dialogue and mutual understanding.⁴⁹ The declarations of the ASEM meetings are widely perceived as no more than policy guidelines,⁵⁰ and it is difficult to quantify the real contribution of ASEM on any particular issue since it does not include formal negotiations.⁵¹ In this regard, compared with other institutions relevant to EU-China relations, cooperation within ASEM is more voluntary. This is not only due to the fact that ASEM is a much younger forum compared to EU-China cooperation, but also to the informality of ASEM. In contrast, the direct interaction between the EU and China in their annual summits is more focused.⁵²

2.3 Environment in the ECAS

The ECAS is a product of strengthening relations between the EU and China, and has in turn had a significant impact in promoting the development of these relations. In April 1998, the then Chinese Premier, the Prime Minister of the UK (which at the time held the EU Presidency), and President of the EU met in London one day before the commencement of ASEM 2. That meeting marked the inaugural the ECAS. It is attended by the Chinese Prime Minister and accompanying ministers and, from the EU, by the President of the Council of Ministers, the President of the EC, and the EU High Representative for Foreign Affairs and Security Policy, as well as other relevant EC vice-presidents and commissioners.

From any perspective, the summit is undoubtedly the most significant institution in EU-China relations. It attracts the highest-level officials from the EU and China to discuss

48 ASEM InfoBoard, Second ASEM Roundtable on Green Building, November 2015, See: <http://www.aseminfoboard.org/events/2nd-asem-roundtable-green-building>.

49 Jacques Pelkmans and Weinian Hu, *Does ASEM work?* Centre for European Policy Studies, No. 321, 14 October 2014, p. 2.

50 Jacques Pelkmans and Weinian Hu, *Study: ‘Stocktaking and Analysis of ASEM’ Outcomes and impact, conclusions and policy recommendations (Final report)*, TRANSTEC, 2014, p. 22.

51 ASEM InfoBoard, Achievements, See: <http://www.aseminfoboard.org/content/achievements>.

52 Astrid Carrapatoso, Climate policy diffusion: interregional dialogue in China-EU relations, *Global Change, Peace & Security*, Vol. 23, No. 2, 2011, pp. 177–194.

the future development of their relationship. In the institutional architecture of EU-China relations, it occupies the pre-eminent position, and results in the formation of sectoral institutions (see Annex III). Due to the significance of the summit, below I discuss all four topics germane to this forum: environmental policy, environmental technology, climate change, and energy.

2.3.1 Environmental Policy

At the inaugural ECAS, the leaders of the EU and China discussed a range of issues, including China's entry into the World Trade Organization, European integration, and the Asian economic crisis; however, the environment was not regarded as a relevant topic.⁵³ Environmental issues registered as a concern for European and Chinese leaders for the first time at the second EU-China summit in Beijing in December 1999. Article five of the EU's post-summit press statement states that "the EU reviewed its cooperation programs with China, notably legal cooperation, education, environment and science and technology."⁵⁴

At the fourth summit in 2001, the two sides agreed to initiate a ministerial-level environmental policy dialogue institution. In 2002, the EU and Chinese leaders met in Copenhagen for the fifth annual summit. In their "Joint Press Statement" after that summit, the leaders reaffirmed their commitment to environmental governance and the UNFCCC, as well as to the Kyoto Protocol as the framework for international cooperation on containing global warming. In the "Joint Statement of the Sixth EU-China Annual Summit," EU and Chinese leaders reaffirmed their support for the establishment of a forum for ministerial environmental policy dialogue. With this support, EU and Chinese environmental officials met following the summit, and announced the establishment of the EU-China Ministerial Environmental Policy Dialogue in 2003. In 2013, the 16th ECAS was held in Beijing. At that meeting, EU and Chinese leaders recognized their common responsibility for advancing global development, and agreed to make green growth a key area for strategic and practical cooperation. In addition, they committed to continuing to promote "cooperation on the environmental flagship initiatives developed respectively by China and the EU, with a

53 EU-China Summit–Joint Press Statement, April 2, 1998, in Francis Snyder (ed.), *The European Union and China, 1949-2008: Basic Documents and Commentary*, Hart Publishing, 2009, pp. 664–669.

54 Second EU-China Summit, 1999: Press Statement of the EU, in Francis Snyder (ed.), *The European Union and China, 1949-2008: Basic Documents and Commentary*, Hart Publishing, 2009, p. 670.

view to maximising the mutual synergies between China's ecological civilization and the European Union's resource efficiency agenda."⁵⁵

2.3.2 Environmental Technology

In the course of the history of the ECAS, S&T first attracted the attention of EU and China leaders at the second summit in 1999. At the next four summits, S&T was always cited by leaders but was never a serious concern.

The first progress in S&T cooperation made by the summit was during the seventh such event in 2004, when the parties took the opportunity to renew the EU-China Science and Technological Cooperation Agreement first signed in 1998. In addition, the leaders also expressed their hope that the EU-China High-level Forum on S&T Policy and Strategy, which took place in May 2005, would "promote the mutual understanding on S&T development strategy and deepen the S&T cooperation relations between China and EU."⁵⁶ At the eighth summit in 2005, the EU and China continued to make progress in the field of S&T cooperation, endorsing the "Joint Declaration on Climate Change." In that document, they highlighted their cooperation in low-carbon technology, and for the first time, referred to the issue of technology transfer. In addition, the leaders agreed to prepare for the China-EU Science and Technology Year, to be held in 2006.

At the ninth annual summit, technology transfer and the protection of intellectual property rights were emphasized and leaders agreed to exert more effort to generate progress in these fields. In addition, they announced that the China-EU Science and Technology Year would begin in October 2006. In May 2009, the EU and China held their 11th annual summit in Prague, Czech Republic. There they undertook to implement the EU-China Science and Technology Partnership Scheme to further strengthen their S&T cooperation. At the 12th ECAS held in November 2009, they again renewed the EU-China Science and Technology Agreement. Furthermore, within the framework of climate change partnership, the EU and Chinese leaders reaffirmed their determination to promote the development and demonstration of CCS technology, and announced the initiation of the second phase of EU-China Near-Zero Emission Coal (NZEC) Project.

55 EU-China 2020 Strategic Agenda for Cooperation, p. 9, See: http://eeas.europa.eu/archives/docs/china/docs/eu-china_2020_strategic_agenda_en.pdf.

56 Seventh EU-China Summit-Joint Statement, December 2004, p. 5, See: http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/er/82998.pdf.

At the 15th summit in 2012, they signed the “Joint Declaration on Innovation Cooperation Dialogue,” and declared the establishment of the EU-China Innovation Cooperation Dialogue.

2.3.3 Climate Change

Despite initial emphasis, climate change was not a topic common to participants at the ECAS until 2002. In the joint press statement at the conclusion of that summit, they “reaffirmed their commitment to the UN Framework Convention on Climate Change as well as the Kyoto Protocol as the framework for international cooperation on this issue and stressed the importance of the latter’s early entry into force.”⁵⁷ The 2005 Beijing summit marked a milestone in EU-China climate change cooperation: the “Joint Declaration on Climate Change between China and the European Union” was issued, and the establishment of the EU-China Partnership on Climate Change declared. The partnership would serve to “develop and demonstrate in China and the EU advanced, near-zero emissions coal technology through carbon capture and storage,” and “reduce significantly the cost of key energy technologies and promote their deployment and dissemination.”⁵⁸ It would provide “a mechanism for the EU and China to take a strategic view of shared climate change objectives, and to take an overview of, give direction to and develop bilateral cooperation activities that contribute to these objectives.”⁵⁹

At the ninth summit in September 2006, leaders confirmed their commitment to the partnership on climate change and agreed to work towards a rolling work plan to further implement the partnership, covering the period 2007–2010.⁶⁰ In the joint statement after the 12th ECAS in November 2009, the parties agreed to elevate their partnership on climate change.⁶¹ This upgrade took place in April 2010, when the Chinese Vice-Chairman of the NDRC, Xie Zhenhua and the European Commissioner for Climate

57 Fifth EU-China Summit–Joint Press Statement, September 2002, See: http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/er/72250.pdf.

58 EU and China Partnership on Climate Change, September 2005, See: http://europa.eu/rapid/press-release_MEMO-05-298_en.htm.

59 China-EU Partnership on Climate Change Rolling Work Plan, October 2006, See: http://www.fmprc.gov.cn/mfa_eng/wjb_663304/zjzg_663340/tyfls_665260/tfsxw_665262/t283051.shtml.

60 Ninth EU-China Summit–Joint Statement, September 2006, See: http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/er/90951.pdf.

61 Joint Statement of the 12th EU-China Summit Nanjing, China, November 2009, See: http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/er/111567.pdf.

Action, Connie Hedegaard, met in Beijing. At that meeting, the parties released the “Joint Statement on Dialogue and Cooperation on Climate Change.” In this document, the two powers gave notice that they had elevated their dialogue on climate change to the ministerial level by establishing the EU-China Ministerial Dialogue on Climate Change.

The most recent development of the EU-China Partnership on Climate Change occurred in 2015. At the 17th ECAS in Brussels, leaders released the “Joint Statement on Climate Change,” 10 years after the publication of “Joint Declaration of the EU-China on Climate Change.” In this document, the parties agreed to further elevate climate change in their relations, and launched the EU-China Low-Carbon Cities Partnership to “promote mutual exchange on policies, planning and good practices for low-carbon and climate resilient cities.”⁶²

2.3.4 Energy

In contrast to EU-China environmental cooperation, energy was not involved in the summits until the third one in 2000. However, energy did not attract considerable attention in the joint statements of the summits in the years immediately following after 2000, and was not mentioned during the 2002 summit.

The seventh annual summit in 2004 in The Hague promoted the position of energy in this forum, and in their joint statement the leaders welcomed the new momentum the energy dialogue had gained after the fifth EU-China energy conference. At the summit, the EU and China signed an agreement on R&D cooperation in the peaceful use of nuclear energy. The agreement launched cooperative research on the subject, and gave researchers from both sides access to research facilities.⁶³ The eighth summit in 2005 advocated the institutionalization of EU-China energy cooperation. In addition to the establishment of the EU-China Climate Change Partnership at this summit, the parties announced the establishment of the EU-China Dialogue on Energy and Transport

62 EU-China Joint Statement on Climate Change, See: http://eeas.europa.eu/delegations/new_zealand/press_corner/all_news/news/2015/eu_china_statement_cc_en.htm.

63 Seventh EU-China Summit–Joint Statement, December 2004, See: http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/er/82998.pdf. This agreement did not go into force and finally replaced by the *Agreement between Euratom and P.R.China for R&D Cooperation in the Peaceful Uses of Nuclear Energy* (R&D-PUNE Agreement), signed on 24 April, 2008.

Strategies.⁶⁴

At the ninth summit the following year, energy attained a more enhanced role, with an Article 21 dedicated to the discussion of energy cooperation; the leaders also elaborated on their primary concerns with regard to global energy issues. The participants recognized that “global energy security is crucial to ensuring economic growth and livelihood of people, maintaining world peace and stability and promoting development worldwide.”⁶⁵ They agreed to “take appropriate measures to further strengthen dialogue and cooperation on energy in an effort to create a stable, secure, efficient and clean energy environment to support sustainable economic and social development.”⁶⁶ The 10th summit reaffirmed the EU and China’s support of their energy cooperation institutions, and outlined four cooperation priorities: renewable energies; energy efficiency; smart grids; and clean coal technologies, including CCS. At the meeting, the participants also endorsed cooperation in establishing the EC2.⁶⁷ This plan realized at the 11th summit in 2009, with the release of the “Joint Statement on Europe-China Clean Energy Center.” At the 16th summit in Beijing in November 2013, the parties initiated the EU-China 2020 Strategic Agenda for Cooperation. In this plan, they listed energy as a sub-topic under the rubric of sustainable development, and addressed global energy security within the framework of their energy dialogue.

By means of this brief review of environmental policy, environmental technology, climate change, and energy in the ECAS, it is evident that environmental concerns have become increasingly important in EU-China political relations. No interest in environmental matters was evident at the inaugural summit, and the topic was marginal at the first few summits of the 2000s, although discussion on the environment was documented. The eighth ECAS held in 2005 can be viewed as a landmark of EU-China environmental cooperation. It was at this meeting that the EU-China Climate Change Partnership and the EU-China Energy Dialogue were launched, and two actions plans concerning environmental technologies were endorsed. As the most eminent forum in

64 EU-China Dialogue on Energy and Transport Strategies–Memorandum of Understanding, September 2005, See: https://ec.europa.eu/energy/sites/ener/files/documents/2005_mou_eu_china_energy_transport_strategies.pdf.

65 Ninth EU-China Summit–Joint Statement, September 2006, p. 6, See: http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/er/90951.pdf.

66 *Ibid.* p. 6.

67 Tenth China-EU Summit–Joint Statement, November 2007, See: http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/er/97355.pdf.

EU-China relations, the annual summits have promoted both the establishment of sectoral institutions in EU-China environmental cooperation, and also directly supported the initiation and implementation of environmental projects.

3. Institutions in Environmental Policy, Environmental Technology, and Climate Change Sectors

This section analyzes the sectoral institutions with mandates for environmental policy, environmental technology and climate change, while sectoral institutions with energy mandates are examined in the following chapter.⁶⁸

3.1 Institutions in the Environmental Policy Sector

One of the results of the annual summits has been the establishment of the EU-China Ministerial Environmental Policy Dialogue. This forum, which was initiated in 2003, is today the highest-level platform for EU-China dialogue on environmental policy. In the policy dialogue, Europe is represented by the Commissioner for Environment, Maritime Affairs and Fisheries, and China by the Chinese MEP.

The evolution of Ministerial Environmental Policy Dialogue can be traced back to the EU-China Environmental Dialogue established in 1992 and the subsequent environment working group initiated in 1996. During the fourth ECAS, the principles proposed convening a ministerial environmental policy dialogue, a suggestion that was reaffirmed in the following two summits. After the seventh summit in 2003, EU and Chinese environmental officials assembled and agreed to arrange the Ministerial Environmental Policy Dialogue, appointing coordinators to oversee this task. The dialogue was designed to “provide an effective platform for policy dialogue and information sharing, and to promote the communication and mutual understanding of the EU and China on the environment.”⁶⁹ Its mandate encompasses a broad expanse of environmental issues,

68 For an image of the institutional architecture of the EU-China cooperation in the fields of environmental policy, environmental technology, and climate change, please refer to Annex III.

69 Fang Fang, 解振华会见欧盟环境委员, 中欧环境政策部长对话机制正式启动 (Xie Zhenhua Huijian Oumeng Huanjing Weiyuan, Zhongou Huanjing Zhengce Buzhang Duihua Jizhi Zhengshi Qidong; Xie Zhenhua meets the EU Commissioner for Environment, and the EU-China Ministerial

such as water pollution, air quality, biodiversity, chemicals, waste, industrial accidents, climate change, and water resources.⁷⁰

The EU-China Ministerial Environmental Policy Dialogue was “partly a response to the environmental side-effects of China’s rapid economic development, but it also met increasing domestic EU and international concerns about protection of the environment, as reflected in particular in EU environmental law on imports.”⁷¹ Since the establishment of the forum, six meetings had been organized by 2016. The second dialogue meeting was held in 2005 in Brussels, the third in 2008 in Beijing, and the fourth in Brussels in 2012. The meetings fulfil the forum’s mandate of frequent bilateral communication on environmental policy; however, few if any tangible achievements have been recorded. In recognition of this problem, EU and Chinese environmental officials at the fifth meeting in 2013 agreed to “strengthen the policy dialogue and to make bilateral cooperation more pragmatic and effective.”⁷² In addition, they released the “Joint Statement on Enhanced Environmental Policy Dialogue and Cooperation on Green Growth,” in which they agreed to launch the EU-China Sustainability Programme, and establish an Environment Forum to address specific topics of mutual interest. It was proposed that this forum convene every two years, that it takes green growth as a suitable theme, and that its findings and outcome be presented to the ministerial environmental policy dialogue.⁷³

Of these five meetings, the first four paid attention primarily to environmental policy introduction and bilateral political trust enhancement; however, no significant practical achievements were recorded. This limit to the dialogue was recognized by the participating environmental officials and, consequently, in the fifth meeting, they reached agreements on specific cooperation projects, and specified a clear direction for future cooperation. In doing so, the EU and China were attempting to transform the forum from a dialogue platform into one that is mandated to take decisions. The sixth

Environmental Policy Dialogue is officially initiated), *Cenew.com.cn*, 13/11/2003, See: http://www.cenews.com.cn/historynews/200804/t20080420_432877.html.

70 Delegation of the European Union to China, *Environment*, See: http://eeas.europa.eu/delegations/china/eu_china/science_tech_environment/environment/index_en.htm.

71 Francis Snyder (ed.), *The European Union and China, 1949-2008: Basic Documents and Commentary*, Hart Publishing, 2009, p. 827.

72 Minutes of the Fifth EU-China Environmental Policy Dialogue, July 2013, See: http://ec.europa.eu/environment/international_issues/pdf/china/1907%20EN%20minutes.pdf.

73 *Ibid.* Joint Statement on Enhanced Environmental Policy Dialogue and Cooperation on Green Growth, July 2013, See: http://europa.eu/rapid/press-release_MEMO-13-707_en.htm, last updated: 24/01/2017.

policy dialogue meeting in Brussels in 2016 sustained the endeavors of the previous one, and stipulated further operational details. Furthermore, the European Commissioner for Environment, Karmenu Vella, and the Chinese minister of the MEP, Chen Jining, agreed to position pollution prevention and control, environmental governance, and green growth and circular economy as the joint priorities for cooperation. The parties also reached an agreement for the organization of a series of activities before their next meeting.⁷⁴

3.2 Institutions in the Environmental Technology Sector

Environmental technology is key to governing the environment. In comparison with conventional technologies, environmental technologies deliver the same economic and social benefits but with reduced environmental impact. They can assist in managing resources more efficiently, control pollution, and they create fewer resource-intensive products and services.⁷⁵ To resist climate change, “the development and deployment of a wide range of low-carbon technologies is essential in achieving the deep cuts in emissions that are needed.”⁷⁶ In this section, I examine EU-China environmental-technology cooperation within the general framework of EU-China S&T cooperation (though the subject of environmental technology also occurs in other EU-China environmental cooperation fields, such as environmental policy, climate change, and energy that are discussed in this study).

The visit by EC DG ENER in 1981 was the first documented interaction between the EU and China on the environment generally, and on S&T specifically. Following that historic visit, the EU-China S&T relationship attained a watershed in 1985 when the parties signed the EU-China Trade and Cooperation Agreement in May of that year. The main target of the agreement was to promote economic and trade cooperation, and industrial and technological cooperation were also encouraged.⁷⁷ In October, a

74 Minutes of the 6th EU-China Ministerial Dialogue on Environment Policy, May 2016, See: http://ec.europa.eu/environment/international_issues/pdf/china/minutes_meeting_2016.pdf.

75 EC, *Clean and competitive: EU Research-Environmental technologies*, Luxembourg: Office for Official Publications of the European Communities, 2004, p. 5.

76 *Stern Review: The economics of climate change (executive summary)*, p. 19, See: <http://siteresources.worldbank.org/INTINDONESIA/Resources/226271-1170911056314/3428109-1174614780539/SternReviewEng.pdf>.

77 Agreement on Trade and Economic Cooperation between the European Economic Community and the People's Republic of China (Article 7, 10 and 11), *Official Journal of the European Communities*, 19.9.85, See: <http://ec.europa.eu/world/agreements/prepareCreateTreatiesWorkspace/treatiesGeneral>

symposium on the new technology revolution took place in Beijing. The core topic of this symposium was the features, impacts and the countermeasures to the new technology revolution, and the symposium's success marked the comprehensive commencement of EU-China S&T cooperation.⁷⁸ That year also witnessed the launch of five cooperation projects—these concerned standardization, data banks, office technology, information technology, and energy programming software.⁷⁹

Having developed over a decade, EU-China S&T cooperation was institutionalized in 1991 with the establishment of a working group on S&T. It has proved a fruitful field for collaboration: from 1981 to 1998, over 230 technology cooperation projects were implemented.⁸⁰ The promising future of EU-China S&T cooperation attracted the attention of high-level leaders at ASEM 2 in April 1998, when the then Chinese Premier Zhu Rongji proposed that Asian and European countries strengthen their cooperation in the field.⁸¹ In the same year, the EU-China Agreement for Science and Technological Cooperation was signed. This agreement, which came into force in 1999, sanctions the collaboration of EU and Chinese researchers in all research, technological development and demonstration activities, including the EU Framework Program (FP) and the corresponding Chinese national research programmes.⁸² The agreement has been renewed three times—in 2004, 2009 and 2014. A steering committee was established to manage its implementation, and, by 2015, had been convened on 12 occasions.⁸³

Moreover, the EU-China S&T year was organized for 2006–2007; and in 2009, the

Data.do?step=0&redirect=true&treatyId=341, last updated: 19/11/2010.

78 中国—欧盟科技合作回顾与展望 (Zhongguo—Oumeng Keji Hezuo Huigu yu Zhanwang; Review and Outlook of the China-EU S&T Cooperation), *科技日报* (*Keji Ribao; Science and Technology Daily*), 15 November, 2000.

79 European Commission—Press Release, See: http://europa.eu/rapid/press-release_MEMO-87-117_en.htm, last update: 24/01/2017.

80 Yang Zhiqing, 中欧签订科技合作协定 (Zhongou Qianding Keji Hezuo Xieding; China and the EU signed an agreement on S&T cooperation), *GMW.cn*, 24/12/1998, See: <http://www.gmw.cn/01gmr/1998-12/24/GB/17916%5EGM4-2404.HTM>.

81 朱镕基总理在第二届亚欧首脑会议上的讲话 (Zhu Rongji Zongli Zai Dierjie Yaou Huiyi Shang de Jianghua; The Speech of Premier Zhu Rongji on the ASEM 2), 03/04/1998, See: http://www.fmprc.gov.cn/web/wjb_673085/zzjg_673183/gjs_673893/gjzz_673897/yohy_673997/zyjh_674007/t1281127.shtml.

82 Agreement for Scientific and Technological Cooperation between the European Community and the Government of the People's Republic of China, *Official Journal of the European Communities*, 11/1/2000.

83 The 12th EU-China Joint Steering Committee on S&T Cooperation held in Beijing On the Occasion of Director General Robert-Jan Smits' visit (30/10/2015), See: http://eeas.europa.eu/delegations/china/press_corner/all_news/news/2015/20151110_en.htm.

MOST and the EC signed the Science and Technology Partnership Scheme to further enhance their cooperation.⁸⁴ In addition, the EU-China Innovation Cooperation Dialogue was launched in 2012 as a forum in which to discuss innovation strategies, encourage and support cooperation on research and innovation activities, and complement mutual strengths and deliver “win-win” results in areas such as human resources and research infrastructure.⁸⁵ By 2015, two dialogue meetings had been convened.

Environmental matters occupy a considerable share of EU-China S&T cooperation. For example, in the seventh EU FP (FP7, 2007–2013), statistics counted 383 participations of Chinese entities in 274 FP7 signed grant agreements, receiving a total EU contribution of EUR 35.24 million and ranked third among all countries in terms of volume of international collaboration, behind the US and Russia. Among all the areas of cooperation in FP7, the environment (combined with energy and transport) comprised 37 percent of the entire program.⁸⁶ In 2014, FP7 was replaced with Horizon 2020, a seven-year FP for research and innovation. With the financial support in the form of nearly EUR 80 billion, it covers three sections: excellent science, industrial leadership, and societal challenges. Among these sections, three subsections related to environmental governance are identified: comprising secure, clean and efficient energy (EUR 5.931 billion), smart, green and integrated transport (EUR 6.339 billion), and climate action, environment, resource efficiency and raw materials (EUR 3.081 billion). Investment by the EU in the environment and associated fields comprise one fifth of the whole investment of Horizon 2020.⁸⁷ After the first 100 calls of proposals, China ranked third in terms of share of eligible applications and fourth in terms of share of participations in signed grant agreements.⁸⁸ By the end of 2016, China had imported

84 Science and Technology Partnership Scheme of the Ministry of Science and Technology of the People’s Republic of China and the Commission of the European Community, May 2009, See: http://eeas.europa.eu/delegations/china/documents/eu_china/research_innovation/1_st_relations/s_t_partnership_agreement_cestys_en.pdf.

85 Joint Declaration on the European Union-China Innovation Cooperation Dialogue, September 2012, See: https://ec.europa.eu/research/iscp/pdf/policy/eu-china_joint-declaration-english.pdf.

86 S&T Relations-Agreements and Framework Programmes, See: http://eeas.europa.eu/delegations/china/eu_china/research_innovation/st_relations/index_en.htm.

87 HORIZON 2020–The EU Framework Programme for Research and Innovation, See: <http://ec.europa.eu/programmes/horizon2020/en>.

88 Horizon 2020 statistics, See: <https://ec.europa.eu/programmes/horizon2020/en/horizon-2020-statistics>.

52,467 technologies from the EU, with the value of USD 197.24 billion.⁸⁹

Environmental technology cooperation between the EU and China has resulted in substantial achievements and continues to evidence significant potential. This potential is not only a matter of contributing to environmental governance and nurturing deeper political mutual trust, but also producing sizeable economic gains.⁹⁰ The environmental protection industry is now widely recognized as one of the most economically promising industries, and has already grown considerably. According to a World Bank report, the implementation of environmental protection policies could generate annual GDP of between USD 1.8 trillion and USD 2.6 trillion in 2030.⁹¹ As the forefront of world environmental technology innovation and deployment, environmental protection is a profitable business opportunity for the EU,⁹² while the rapid expansion of China's environmental protection industry and its investment in environmental protection make China an extensive market.

3.3 Institutions in the Climate Change Sector

89 Ministry of Foreign Affairs, 中国同欧盟的关系 (*Zhongguo tong Oumeng de Guanxi, China-EU Relations*), See: http://www.fmprc.gov.cn/web/gjhdq_676201/gj_676203/oz_678770/1206_679930/sbgx_679934/, last renewed January, 2017.

90 The investment and cooperation in environmental governance can lead to considerable economic profits. See: Everett Tim et al., *Economic growth and the environment*, MPRA Paper, No. 23585, March 2010; *The Transition to a Green Economy: Benefits, Challenges and Risks from a Sustainable Development Perspective*, A Report to Second Preparatory Committee Meeting for United Nations Conference on Sustainable Development, 2011; Antoine Dechezleprêtre and Misato Sato. *The impacts of environmental regulations on competitiveness*, Policy Brief, November 2014; Matt Rayment et al., *The economic benefits of environmental policy*, November 2009, See: http://ec.europa.eu/environment/enveco/economics_policy/pdf/report_economic_benefits.pdf; Anastasios Xepapadeas, *Economic growth and the environment*, *Handbook of environmental economics*, Vol. 3, 2005, pp. 1219–1271; Stephen Meyer, *The economic impact of environmental regulation*, *Journal of Environmental Law & Practice*, Vol. 3, No. 2, 1995, pp. 4–15.

91 Sameer Akbar et al., *Climate-smart development: adding up the benefits of actions that help build prosperity, end poverty and combat climate change*, 2014, See: <http://documents.worldbank.org/curated/en/794281468155721244/pdf/889080WP0v10RE0Smart0Development0Ma.pdf>. Actually, due to the lack of a widely shared standard, it is difficult to assess the economic benefits of investment in environmental protection. However, a large number of works on this topic lead to a promising future. For example, in a report by the United Nations Environment Programme in 2008, the authors quoted the study of the Roland-Berger Strategy Consultants, that the global market for environmental products and services is projected to double from USD 1,370 billion per year to USD 2,740 billion by 2020. According to the Stern Review, the global markets for low-carbon energy products are likely to be worth at least USD 500bn per year by 2050, or even more. See: Michael Renner, Sean Sweeney and Jill Kubit, *Green jobs: Towards decent work in a sustainable, low-carbon world*, September 2008, See: http://adapt.it/adapt-indice-a-z/wp-content/uploads/2013/08/unep_2008.pdf; *Stern Review: The economics of climate change (executive summary)*, p. 16, See: <http://siteresources.worldbank.org/INTINDONESIA/Resources/226271-1170911056314/3428109-1174614780539/SternReviewEng.pdf>.

92 EC, *EU environment policy supporting jobs and growth*, Luxembourg: Office for Official Publications of the European Communities, 2011, p. 18.

Climate change as a common concern for the EU and China can be traced back to 1992, when they cooperated to formulate the UNFCCC at the Rio Summit.⁹³ Since then, climate change has become an increasingly important issue for EU-China relations.

The partnership in the climate change sector, and the supporting institutions that the EU and China have established, provide the parties with channels to communicate and coordinate climate policies, and to discuss possibilities of cooperation in dealing with climate change. The EU-China Climate Change Partnership established in 2005 specifies various “points.” These include two general contexts: at the global level, “we underline our commitment to the objectives and principles of the UNFCCC and the Kyoto Protocol” and at a bilateral level, “we welcome the following recent initiatives”—the China-EU Action Plan on Clean Coal and the China-EU Action Plan on Industrial Cooperation on Energy Efficiency and Renewable Energies. In addition, it consists of three goals, which quote from the “Joint Declaration on Climate Change between China and the European Union”: 1) “we will strengthen our dialogue on climate change policies and exchange views on key issues in the climate change negotiations,” 2) “we will cooperate to realize our respective goals of significantly improving the energy intensity of our economies,” and 3) “we will strengthen our practical cooperation on the development, deployment and transfer of low carbon technology, to enhance energy efficiency and promote the low carbon economy.”⁹⁴ To achieve these goals, the EU and China agreed to undertake three main projects: the EU-China Clean Development Mechanism (CDM) Facilitation Project, the EEP, the EU-China Cooperation on CCS.⁹⁵

The EU-China CDM Facilitation Project (2007–2010) aimed to strengthen the CDM as a central pillar on China’s path to sustainable development. With an investment of EUR 2.8 million, this was the largest project within the overall framework of EU-financed CDM projects.⁹⁶ The EU-China Cooperation on CCS is a product of the EU-China

93 Yu Hongyuan, *Global Warming and China’s Environmental Diplomacy*, New York: Nova Science Publishers, 2008, pp. 74–75.

94 David Scott, Environmental issues as a ‘strategic’ key in EU-China relations, *Asia Europe Journal*, Vol. 7, Iss. 2, 2009, pp. 211–224.

95 Giulia Romano, *The EU-China Partnership on Climate Change: Bilateralism Begetting Multilateralism in Promoting a Climate Change Regime?*, MERCURY E-paper No. 8, December 2010, See: <https://spire.sciencespo.fr/hdl:/2441/lil4hs3p788f0gq02efm2qjm9/resources/e-paper-no8-r2010.pdf>.

96 EU-China CDM Facilitation Project, See: http://eeas.europa.eu/delegations/china/documents/projects/1_eu-china_cdm_facilitation_project_fiche.pdf, last update: 3 February 2010; 中欧 CDM 促进项目

Climate Change Partnership. As addressed in the “Joint Declaration on Climate Change between China and the European Union,” the EU and China aim, by 2020, to “develop and demonstrate in China and the EU advanced, near-zero emissions coal technology through carbon capture and storage.”⁹⁷ CCS is considered as “a very important technology,” “the Golden Gas Mountain and a road to low carbon economy”⁹⁸ for China, which is still heavily reliant on coal for power generation. By applying this technology, CO₂ can be captured when power is generated, and injected underground for storage. It is “the critical enabling technology that would reduce CO₂ emissions significantly while also allowing coal to meet the world’s pressing energy needs.”⁹⁹ To achieve this goal, the EU and China launched the EU-China NZEC project to develop and demonstrate CCS technology in the EU and China. This project is intended to be implemented in three phases: first, a “feasibility study,” then, a “deeper study and a pilot project,” and finally, the commercial application of CCS technology.¹⁰⁰ The first phase was concluded in 2009.¹⁰¹

The EU-China Partnership on Climate Change is supported by three institutions. The first is the Bilateral Consultation Mechanism (BCM). The need for the formation of such an institution had already received attention when the partnership was founded in 2005, with the partners agreeing that the “follow-up of the Partnership will be carried out regularly at a suitably high level through a bilateral consultation mechanism.”¹⁰²

(Zhongou CDM Cujin Xiangmu; China-EU CDM Facilitation Project), See: http://www.most.gov.cn/ztzl/qgkjwsgzhy/kjwssywcgz/kjhzcgzsf/201108/t20110824_89221.htm.

⁹⁷ EU and China Partnership on Climate Change, September 2005, See: http://europa.eu/rapid/press-release_MEMO-05-298_en.htm.

⁹⁸ Taco C.R. van Someren, Shuhua van Someren-Wang, *Green China Sustainable Growth in East and West*, Heidelberg: Springer, p. 37.

⁹⁹ Stephen Ansolabehere et al., *The Future of Coal-Options for A Carbon-Constrained World: Executive Summary*, Massachusetts Institute of Technology, 2007, p. x, See: http://web.mit.edu/coal/The_Future_of_Coal_Summary_Report.pdf.

¹⁰⁰ Giulia Romano, *The EU-China Partnership on Climate Change: Bilateralism Begetting Multilateralism in Promoting a Climate Change Regime?*, MERCURY E-paper No. 8, December 2010, See: <https://spire.sciencespo.fr/hdl/2441/lii4hs3p788fogg02efm2qjm9/resources/e-paper-no8-r2010.pdf>; Sijbren De Jong and Jan Wouters, *Making the Transition: EU-China Cooperation on Renewable Energy and Carbon Capture and Storage*, Leuven Centre for Global Governance Studies, Working Paper No. 66, June 2011; Communication from the Commission to the European Parliament and the Council-Demonstrating Carbon Capture and Geological Storage (CCS) in emerging developing countries : financing the EU-China Near Zero Emissions Coal Plant project, 25/06/2009, See: <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52009DC0284>.

¹⁰¹ EC–Climate Action–China-EU Near Zero Emission Coal, See: http://ec.europa.eu/clima/dossiers/nzec_en#tab-0-0.

¹⁰² EU and China Partnership on Climate Change, September 2005, See: http://europa.eu/rapid/press-release_MEMO-05-298_en.htm.

The BCM was consequently established the following year. The first meeting took place in Vienna, where a broad range of issues was discussed, including the elaboration of a work plan for the partnership.¹⁰³ At the ninth summit in September 2006, the EU and Chinese leaders agreed to draft a work plan to guide the implementation of their climate change partnership. In October 2006, using the opportunity of the opening of the second meeting of the BCM, the Chinese and EU officials agreed the plan in Beijing. The China-EU Partnership on Climate Change Rolling Work Plan was enacted to assist in implementing and achieving the objectives of the “Joint Declaration on Climate Change.”¹⁰⁴ It addresses nine priority areas, such as energy efficiency and energy conservation; new and renewable energy; clean coal technologies and CO₂ capture and storage for near-zero emissions power generation; and the impacts of and adaptation to climate change.¹⁰⁵ The work plan also facilitates clarification of the role and practical operation of the BCM. It regulates that the BCM should be held at least once, and where necessary twice, every year, and that it ensures “contacts at working level ... to provide broader political coordination and guidance for the implementation of the Partnership and strengthen their dialogue on climate change policies and exchange views on key issues in the climate change negotiations.”¹⁰⁶

The second institution is the EU-China Ministerial Dialogue on Climate Change which was first proposed by EU and Chinese leaders at the 12th annual summit in 2009. This forum aims to “deepen mutual understanding, strengthen coordination, enhance practical cooperation and exchange of views.”¹⁰⁷ When it was initiated, a climate change hotline was launched to “facilitate an expedited exchange of views and sharing of information on new developments related to climate change.”¹⁰⁸ Together with the BCM, the Ministerial Dialogue and the hotline facilitate communication between EU and China on climate change issues. The third institution is the newly established EU-China Low-Carbon Cities Partnership. The EU-China Low-Carbon Cities Conference

103 China-EU Partnership on Climate Change Rolling Work Plan, October 2006, See: http://www.fmprc.gov.cn/mfa_eng/wjb_663304/zzjg_663340/tyfls_665260/tfsxw_665262/t283051.shtml.

104 *Ibid.*

105 *Ibid.*

106 *Ibid.*

107 Joint Statement on Dialogue and Cooperation on Climate Change, April 2010, See: https://ec.europa.eu/clima/sites/clima/files/international/cooperation/china/docs/joint_statement_dialogue_en.pdf.

108 *Ibid.*

was held in June 2016, under the rubric of this partnership, and was attended by Director-General of DG ENER and the Chinese Special Representative on Climate Change Issues.

Climate change is a key area in EU-China relations, with significant potential to be realized from cooperation on the issue. On the one hand, this is due to the economic benefits of the partnership, such as the substantial economic gains that originate from mutual cooperation on low-carbon technology, and climate change adaptation and mitigation. On the other, it is due to the partnership's potential contribution to controlling global warming and the "possibility of [it] being a role model for other economies and a testing ground for bold strategies of how to combat climate change and at the same time, create win-win strategies for all participating countries."¹⁰⁹ The numerous institutions that have been established to manage their climate change cooperation should enhance understanding between the EU and China, with the expectation of a reduction of the type of conflicts that dominated the Copenhagen Conference in 2009.¹¹⁰

4. The Roles and Limits of Institutions in EU-China Environmental Cooperation

The discussion above has demonstrated that institutions are playing an important and positive role in EU-China environmental cooperation. With the help of associated institutions, the parties have strengthened their ability to communicate and their shared understanding of the environment, and implemented a number of cooperation projects. However, these institutions also experience constraints, mainly concerning their practical operation and effectiveness in dealing with issues like environmental technology transfer and climate change.

109 Constantin Holzer and Haibin Zhang, The potentials and limits of China-EU cooperation on climate change and energy security, *Asia Europe Journal*, Vol. 6, Iss. 2, 2008, p. 219.

110 Pietro De Matteis, EU-China Cooperation in the Field of Energy, Environment and Climate Change, *Journal of Contemporary European Research*, Vol. 6, No. 4, 2010, pp. 449–477.

4.1 The Roles of Institutions

As analyzed above, the functioning of institutions in EU-China environmental cooperation principally concerns three aspects: strengthening bilateral communication and understanding, supporting the implementation of environmental projects, and assisting in the creation of new subsidiary institutions.

1) Strengthening bilateral communication and understanding. Promoting bilateral understanding and thereby reducing misunderstanding is one of the basic functions of institutions. This role of institutions is observable in all three sectors analyzed above. For example, the EU-China Ministerial Environmental Policy Dialogue, which is designed as a platform for the European and Chinese authorities to introduce policy and exchange information, performs such a role. In the climate change field, the ministerial dialogue is a forum for the EU and China to strengthen bilateral understanding on climate change and coordinate positions before the annual global climate change negotiations.

2) Supporting the implementation of environmental projects. By using institutions as a platform for decision-making, the EU and China have attained a number of achievements beyond mere dialogue. The ECAS, on the interregional level, and relevant institutions on the sectoral level, have been facilitating the production of more tangible results from EU-China environmental cooperation. During the eighth ECAS held in 2005, for example, in addition to the major achievement—the publication of “Joint Declaration on Climate Change between China and the EU”—the parties signed a memorandum of understanding on EU-China dialogue on energy and transport strategies, as well as two major financing agreements for the EU-China biodiversity and river basin management programmes. At the 11th annual summit in 2009, leaders released the “Joint Statement on Europe-China Clean Energy Center.” At the 12th ECAS in the same year, three agreements and memoranda were signed, including the Financing Agreement for the EU-China Environmental Governance Programme. At the sectoral level, within the framework of EU-China Climate Change Partnership, the EU and China have implemented three projects: the CDM Facilitation Project, the EEP, and the CCS project.

3) Assisting in the creation of new institutions. This function of institutions is most

apparent between the two levels of institutions, that is, between the level of the ECAS and the sectoral environmental institutions. For example, during the sixth summit (2003), the EU and Chinese leaders reaffirmed their commitment to environmental protection and their support to the EU-China Ministerial Environmental Policy Dialogue. One month later, the European Environment Commissioner visited China and met with the Chinese Director of National Environmental Administration. At this meeting the parties announced the establishment of the EU-China Ministerial Environmental Policy Dialogue. Further evidence of this role of the summit was recorded in 2005. During the eighth summit in Beijing, the two sides released the “Joint Declaration on Climate Change between China and the European Union” and established a partnership on climate change, and a dialogue institution on energy. Within the framework of this partnership, the EU and China established a ministry-level dialogue forum on climate change in 2010. In addition, the EU-China Innovation Cooperation Dialogue and the EU-China Low-Carbon Cities Partnership all benefited from direct meetings of EU and Chinese leaders within the framework of the ECAS.

4.2 The Limits of Institutions

1) The practical operation of institutions is not without problems. The practical operation problems of the institutions in EU-China environmental cooperation are particularly conspicuous in the EU-China Ministerial Environmental Policy Dialogue. First, the forum lacks a clear aim. The function of the forum, and thus its purpose, is currently transforming from that of a dialogue platform to that of a decision-making institution. However, whether this transformation will be a success is not yet certain. In addition, although this transformation may make the dialogue more powerful, it might overlap with the decision-making functions of other institutions. Greater clarity from EU and Chinese environmental leaders is needed on the definition of the aim of the EU-China Ministerial Environmental Policy Dialogue.

Second, the forum lacks a clear theme. As indicated above, in the five meetings from 2003 to 2013, EU and Chinese environmental leaders discussed many topics related to the environment. Such broad discussions may lead to a decrease in the value of the institution. The EU and China might consider narrowing the themes under discussion, or assigning a limited number of topics per meeting. Third, the dialogue lacks a solid

meeting mechanism. Currently, the venue for the dialogue alternates between Beijing and Brussels, as was originally envisaged. However, these meetings have not been held regularly: the first was in 2003, and the second to the sixth in 2005, 2008, 2012, 2013 and 2016, respectively. The leaders of the parties might consider organizing the dialogue regularly, such as every two years.

2) The effectiveness of the institutions in dealing with serious conflicts is limited. As per realist critique, when dealing with issues with fundamental conflicts (including economic ones), the institutions are relatively ineffective at reducing conflicts. In this case, the “relative-gain problem” occurs, and the question is asked: “Who will gain more?” With regard to the EU-China environmental relationship, this problem is apparent in environmental technology transfer and climate change issues. Environmental technology is at the core of EU-China environmental cooperation, and both parties have recognized the significance of their cooperation on the matter. They have established various cooperation institutions and implemented a number of projects. However, there are still some barriers in the way of environmental technology cooperation. As Hozler and Zhang Haibin argue, a dilemma exists in this cooperation.¹¹¹ China hopes to gain cheap access to key technologies to reduce its GHG emissions, while “the EU has to have equivalent economic compensation for its technology, without having to fear overwhelmingly fierce competition from China in the future.”¹¹² But, as the authors further explain, China “has proven to be very fast in absorbing foreign technology. With its labor cost advantage, China could easily become a competitive exporter of high-technology goods to the West in the near future.”¹¹³ This generates considerable pressure on the EU from the business community, the unions to secure labor posts, and from the voters. To solve the dilemma, “it is not enough to just

111 Constantin Holzer and Haibin Zhang, The potentials and limits of China-EU cooperation on climate change and energy security, *Asia Europe Journal*, Vol. 6, Iss. 2, 2008, pp. 217–227. Giulia Romano identifies two specific issues that are constraining the technology transfer between the EU and China: the problem of protecting intellectual property rights and a lack of public support to sustain technology transfer. See: Giulia Romano, *The EU-China Partnership on Climate Change: Bilateralism Begetting Multilateralism in Promoting a Climate Change Regime?*, MERCURY E-paper No. 8, December 2010, See: <https://spire.sciencespo.fr/hdl:/2441/lii4hs3p788f0gq02efm2qjm9/resources/e-paper-no8-r2010.pdf>; Zha Daojiong and Lai Suet Yi, China-EU Energy Governance: What Lessons to be Drawn? in Michèle Knodt, Nadine Piefer and Franziska Müller (eds.), *Challenges of European External Energy Governance with Emerging Powers*, Ashgate Publishing, 2015, p. 142.

112 *Ibid.* p. 225.

113 *Ibid.* p. 225.

build trust between governments through policy dialogue.”¹¹⁴ The authors suggest that the key to confronting this challenge is to “take into strong account the interests of the business community through providing a variety of incentives for companies to engage in research and technology distribution.”¹¹⁵

A similar problem applies to the EU-China Climate Change Partnership. Although, in terms of this partnership, some dialogues and cooperation projects have been implemented, one should be aware that the respective motives of the EU and China for participating in this partnership are quite different. The EU attempts to influence China’s climate change policy-making, and to encourage China’s transformation to a low-carbon economy by actively selling its model to China and providing added financial and technological assistance.¹¹⁶ The EU is deeply concerned about the potential impact on the climate of China’s soaring energy consumption, the concomitant carbon emissions, and its potential conflict with China over the supply of mineral fuels. In addition, the EU is confident of its model for fighting climate change, and the probable economic gains from its cooperation with China on clean energy technologies.¹¹⁷ China, which is the largest developing economy in the world, and still has a sizeable population living below the poverty line, has different goals for its climate change cooperation with the EU. For China, the primary goal is to “ensure that the EU’s engagement on climate change supports rather than hinders its economic development.”¹¹⁸ On one hand, it wants to take advantage of the EU’s financial and technological assistance to the greatest degree possible to help it reduce likely environmental and economic losses due to climate change; on the other, it refuses to make any commitments that are not made voluntarily, commitments which might stunt

114 *Ibid.* p. 226.

115 *Ibid.* p. 225.

116 Giulia Romano, *The EU-China Partnership on Climate Change: Bilateralism Begetting Multilateralism in Promoting a Climate Change Regime?*, MERCURY E-paper No. 8, December 2010, See: <https://spire.sciencespo.fr/hdl:/2441/lii4hs3p788fogg02efm2qjm9/resources/e-paper-no8-r2010.pdf>; John Fox and François Godement, *A Power Audit of EU-China Relations*, European Council on Foreign Relations, April 2009, See: http://www.ecfr.eu/page/-/ECFR12_-_A_POWER_AUDIT_OF_EU-CHINA_RELATIONS.pdf; Mireia Paulo Noguera, *The EU-China Strategic Partnership in Climate Change: The Biodiversity Programme*, EU Diplomacy Papers, 2/2011.

117 Duncan Freeman and Jonathan Holslag, *Climate for Cooperation: The EU, China and Climate Change*, A report by the Brussels Institute of Contemporary Chinese Studies, September 2009.

118 John Fox and François Godement, *A Power Audit of EU-China Relations*, European Council on Foreign Relations, April 2009, p. 10, See: http://www.ecfr.eu/page/-/ECFR12_-_A_POWER_AUDIT_OF_EU-CHINA_RELATIONS.pdf.

its economic growth.¹¹⁹ With such significant differences in mind, it is difficult to expect the associated institutions to coordinate the EU and China's climate change policies effectively.

Since the opening of the first EU-China energy conference, and with the support of a number of institutions, EU-China environmental cooperation has achieved considerable results. The number of institutions has increased, and these are assisting the parties in cooperating more efficiently; concurrently, some cooperation projects have been implemented, and the horizon of their cooperation has expanded from a bilateral level to a global one. In the course of this process, institutions have played a prominent role: they have facilitated the strengthening of mutual understanding, the implementation of environmental projects, and the creation of new institutions. However, these institutions also suffer a number of constraints, particularly concerning their practical operation, and their effectiveness in tackling issues where serious conflicts arise.

119 *Ibid*; Hannes Hanso, *Partners and Rivals: The EU and China*, pp. 103–130, See: http://www.icds.ee/fileadmin/media/icds.ee/failid/Hannes_Hanso_-_Partners_and_Rivals_-_The_EU_and_China.pdf.pdf.

Chapter VI. EU-China Energy Cooperation: An Institutional Analysis

There are few doubts on the significance of energy as it is so obviously engaged in people's daily lives and as such contributes to the economy. In short, it is at the core of the way of living of modern societies. Beyond the economic sphere, energy is also considered as a security issue. To the environment, the consumption of energy is the major contributor of a series of environmental issues, such as air pollution and climate change. According to World Bank, the energy sector alone releases 59 percent of total global GHG emissions. Also, energy sector is the fastest growing GHG contributor, with an accumulated rate of 145 percent between 1970 and 2004, followed by the transport sector (120 percent), the industry sector (65 percent), the land use, land change and forestry sector (40 percent), the agriculture sector (27 percent), and the buildings sector (26 percent).¹

The earliest record of EU-China energy cooperation is seen in 1981. Energy shares a critical role in the overall EU-China environmental cooperation. As discussed earlier, the EU-China cooperation on environment was first initiated in the energy field, and it was also energy that pushed the EU-China environmental cooperation into its second phase in 1994. Now, the EU and China have identified six priority areas for energy cooperation: renewable energy, smart grids, energy efficiency in buildings, clean coal, nuclear energy, and energy legislation.²

This chapter focuses on the discussion of EU-China energy cooperation and serves as a case study of this thesis. The remainder of this chapter is organized as follows. The first

This chapter had been revised and published by the European Institute for Asian Studies (Brussels). See: Zhang Chao, *The EU-China Energy Cooperation: An Institutional Analysis*, European Institute for Asian Studies (Briefing Paper), February 2017, <http://www.eias.org/briefing-papers/eu-china-energy-cooperation-an-institutional-analysis/>.

1 Organization of American States, *Energy Security for Sustainable Development in the Americas*, See: http://www.summit-americas.org/GA09_CD/add_ini_pb_energy_sec_sust_en.pdf. Stressing the link between energy and climate security is essential, as according to the Stern Review, energy emissions account for up to 65% of total GHG emissions. See: *Stern Review: The economics of climate change (executive summary)*, p. 4, See: <http://siteresources.worldbank.org/INTINDONESIA/Resources/226271-1170911056314/3428109-1174614780539/SternReviewEng.pdf>.

2 EC–Energy–International Cooperation–China, See: <https://ec.europa.eu/energy/en/topics/international-cooperation/china>.

section discusses the common challenges that the EU and China face in energy, and the conflicts of interests between them. This section serves as a background introduction of this chapter. In the second section, I analyze the evolution of EU-China energy cooperation since 1981. Based on an institutionalist perspective, I divide the evolution of EU-China energy cooperation into three phases: 1981–1993, 1994–2011, and 2012–present. In section three, which is also the core of this chapter, I provide a detailed analysis on the institutional architecture of EU-China energy cooperation. In this section, I analyze these institutions at two levels. The first level, which is the sectoral level, constitutes the EU-China High-level Energy Meeting, EU-China Energy Dialogue, EU-China Partnership on Urbanization, and EU-China Energy Consumer Partnership. The second level, which is the sub-sectoral level, includes a number of institutions on specific energy issues. Based on these discussions, in section four, I discuss the roles and limits of institutions in the EU-China energy cooperation.

1. Energy in EU-China Relations

The EU and China are both among the largest economic entities in the world. To fuel their economies, they have to consume a large volume of energy, and thus are both major players in global energy market. The EU and China share some common challenges in the energy field, among which, energy security, energy transition, and environmental problems (particularly climate change) due to the excessive consumption of fossil fuels, are the major ones.¹

1.1 Energy Security

The EU and China are two of the world's largest energy consumers, and face the problem of high dependence on imported energy. For the EU, according to the data of BP, in 2014, it consumed 12.5 percent of the world's total energy. Among all the energy types, oil remains the dominant fuel, while clean energy (nuclear, renewable, and hydro)

¹ EC2, China-EU Energy Cooperation Roadmap 2020 (Concept Note), March 2015, See: http://documents.rec.org/publications/EC2_roadmap_2020_EN_web.pdf; Maria Kottari and Virginia Marantidou, The Sino-European Nexus in Global Energy Governance, *EU-China Observer*, Issue #3.16, 2016, pp. 8–18.

accounted for 24 percent of its energy consumption.² Although non-fossil fuel is playing a major role in its power generation, the EU is highly dependent on imported energy (Figure 1). The data of 2015 indicated that the EU imported 53.2 percent of its total energy, and it was particularly dependent on international supply in petroleum (and petroleum products) and natural gas, which occupied 87.4 percent and 65.3 percent of its total energy supply, respectively.³ For China, with a population of 1.4 billion and a booming economy since early 1980s, its energy consumption has been growing rapidly. While it consumed only 602 MTCE in 1980, this figure jumped to 4260 MTCE in 2014—seven times more than that of three decades ago. While China was producing 19.1 percent of global energy, it was also the world's biggest energy consumer, who consumed 23 percent of world's energy and contributed 61 percent of net energy consumption growth in 2014. Specifically to energy sectors, today, China is consuming around half (50.6 percent) of the world's coal, 12.4 percent of world's oil, and 5.4 percent of world's natural gas.⁴ China's domestic energy production cannot possibly feed its energy needs. Therefore, China is also importing substantially from the world market, which makes China heavily reliant on the international energy market. In 2014, China imported 308 million tonnes oil, which shared 59.5 percent of its oil consumption.⁵ According to the estimation of BP, China's oil import dependence will rise to 76 percent in 2035.⁶

2 BP Statistical Review 2015—The EU energy market in 2014, See: <http://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2015/bp-statistical-review-of-world-energy-2015-eu-insights.pdf>.

3 *EU Energy in Figures—Statistical Pocketbook 2015*, Luxembourg: Publications Office of the European Union, 2015, See: https://ec.europa.eu/energy/sites/ener/files/documents/PocketBook_ENERGY_2015%20PDF%20final.pdf.

4 BP Statistical Review of World Energy (June 2015), See: <https://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2015/bp-statistical-review-of-world-energy-2015-full-report.pdf>.

5 Ran Yongping, 中国石油对外依存度近 60% 全年净进口约 3.08 亿吨 (Zhongguo shiyou duiwai yicundu jin 60%, quannian jing jinkou yue 3.08 yi dun; China's dependence on imported oil is near to 60%, and the net import is about 308 million tonnes), *People.cn*, See: http://paper.people.com.cn/rmrb/html/2015-01/29/nw.D110000renmrb_20150129_8-02.htm.

6 BP Energy Outlook 2035, Country and regional insights—China, See: <http://www.bp.com/en/global/corporate/energy-economics/energy-outlook/country-and-regional-insights/china-insights.html>.

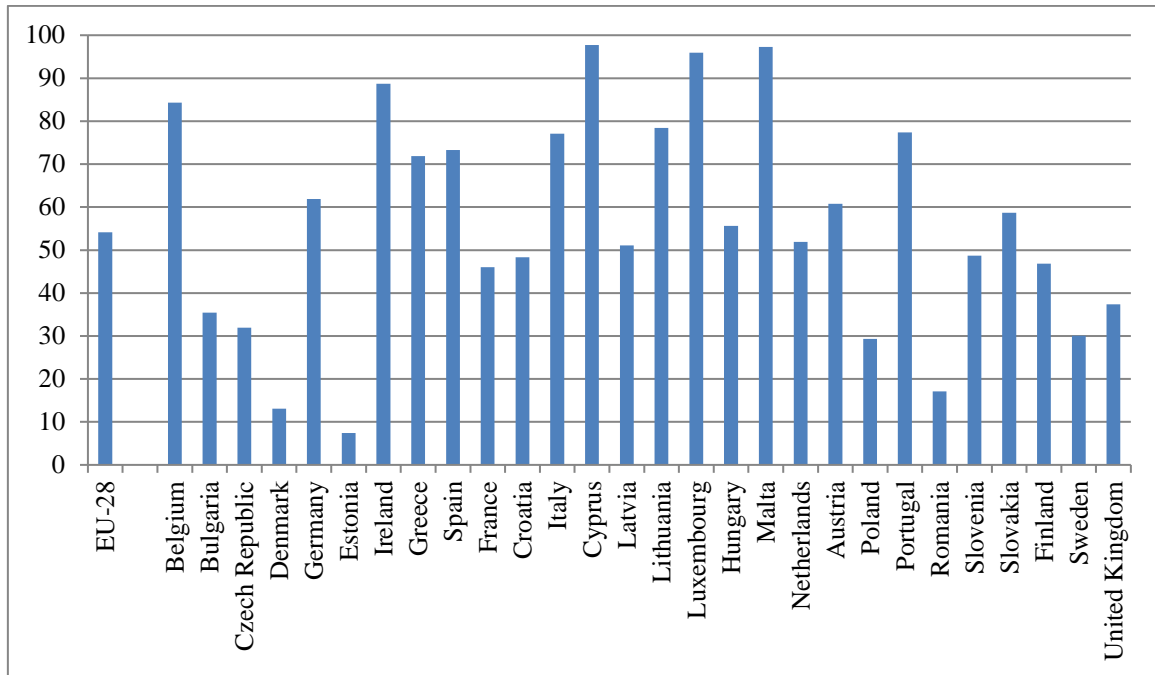


Figure 1 The EU's Energy Dependency Rate (2015)

Source: Eurostat, <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tsdcc310>

1.2 Energy Transition

The EU and China have realized the problems brought by the burning of fossil fuels. Therefore, they are all taking great efforts to nurture their renewable energy industries and decrease the energy intensity. In the last few decades, the EU has been experiencing an energy transition from relying on fossil fuel to non-fossil fuel, and a decrease of energy intensity. In 2014, the EU's oil consumption declined to its lowest level since 1969, while natural gas consumption also declined to its lowest level since 1995 and coal to its lowest level since 2009. Meanwhile, the EU has been continuously sparing no efforts to lower its energy intensity. In 2014, the EU successfully cut down its energy intensity by 5.2 percent, to its lowest level since at least 1970. This decline was more dramatic than its ten-year average of 2.2 percent.⁷ This achievement was largely due to and accompanied with its investment in the renewable industry. In 2011 alone, the EU invested USD 120.7 billion in its renewable industry. This figure was still the largest

⁷ BP Statistical Review 2015—The EU energy market in 2014, See: <http://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2015/bp-statistical-review-of-world-energy-2015-eu-insights.pdf>.

investment by a single economic entity into renewable ever recorded (by 2016). Although the EU's investment declined sharply since then, in 2015, it was still occupying the position only second to China on the investment ranking with USD 57.5 billion.⁸

For China, it has taken “optimizing the energy structure” as one of the priorities of government's work. To achieve this target, China endeavors to enhance its energy efficiency, reduce its reliance on coal and nurture the growth of clean energy. Take the growth of renewable energy sector as an example. Thanks to the promotion of the government, China's renewable energy industry experienced a boom from almost nothing to one of the world leaders. In 2014, China invested USD 83.3 billion in renewable industry. This figure was more than twice of its follower—the US (USD 38.3 billion), and occupied almost one-third of the world's annual investment (USD 270.2 billion). Considering the Chinese investment was only USD 3.0 billion ten years ago, this increase is quite remarkable.⁹ With the heavy investment, now China is leading the world in various fields, such as total renewable power capacity and generation, hydropower capacity and generation, wind power capacity, solar water collector capacity, and geothermal heat capacity.¹⁰

Although China has made huge progress in renewable energies, it still faces serious technical difficulties to a low-carbon economy. As revealed by a Chinese study, among 62 key technologies to assist China in shifting its economic development pattern, 43 were not in Chinese hands.¹¹ China has to seek international partners for technology innovation and transfer, while with the support of a large budget, the EU is one of the most successful and competitive actors in this sector. Now, European companies enjoy a share of 40 percent of all patents for renewable technologies,¹² and the EU's eco-

8 Angus McCrone et al., *Global Trends in Renewable Energy Investment 2015*, Frankfurt School and FS-UNEP Collaborating Centre for Climate and Sustainable Energy Finance, See: http://fs-unep-centre.org/sites/default/files/attachments/key_findings.pdf.

9 *Ibid.*

10 Janet Sawin et al., *Renewables 2015 Global Status Report*, Renewable Energy Policy Network for the 21st Century, 2015, See: http://www.ren21.net/wp-content/uploads/2015/07/REN12-GSR2015_Onlinebook_low1.pdf.

11 Zou Ji et al. (ed.), *China Human Development Report 2009/10: China and a Sustainable Future: Towards a Low Carbon Economy and Society*, Beijing: China Translation and Publishing Corporation, 2010, pp. 58–59, See: http://hdr.undp.org/sites/default/files/chine_2010.pdf.

12 Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee, The Committee of the Regions and the European Investment Bank: A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy,

industries, which employ more than two million people, account for about one third of the global market and are growing by around five percent annually.¹³ The EU as a technically advanced economy is looking for investment and business opportunities in emerging markets, while China, the world's fastest growing economy, is thirsty for low-carbon technological equipment to meet its high demands of clean energy. Although with such a high degree of complementation between one another and great potential for economic benefits, there are still serious obstacles when it comes to key technologies transfer to China. The rational interests of government, business community and civil society, together with the insecurities associated with the cooperation on clean energy key technology transfer, are central among them.¹⁴

1.3 Climate Change

The EU and China are victims of and also main contributors to global warming. The EU, as the largest economy and China, as the largest emerging economy and the third largest economy in the world, jointly contributed 36 percent of global GHG emission in 2015.¹⁵ Therefore, "to a certain degree, whether the efforts to contain climate change will be successful or not in the coming years will be affected by the positions and policies of the EU and China."¹⁶

Now, in climate change negotiations, the EU and China are sharing some common grounds. For example, the EU and China both are the parties of the UNFCCC and recognize the significance of joint and urgent efforts to tackle climate change; both sides hold the common but differentiated responsibilities principle and the necessity of the developed countries to lead the reduction efforts; both sides agree that the developed countries should help the developing world address the challenge of climate change.¹⁷

COM(2015) 80 final, 25 February 2015, p. 3, See: <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=COM%3A2015%3A80%3AFIN>.

13 European Environment Agency, Environmental Technology, See: <http://www.eea.europa.eu/themes/technology/intro>.

14 Constantin Holzer and Haibin Zhang, The potentials and limits of China-EU cooperation on climate change and energy security, *Asia Europe Journal*, Vol. 6, Iss. 2, 2008, pp. 217–227.

15 Global Carbon Project, *Global Carbon Budget-Summary Highlights*, See: <http://www.globalcarbonproject.org/carbonbudget/16/highlights.htm>.

16 Men Jing, Climate change and EU-China partnership: realist disguise or institutionalist blessing?, *Asia Europe Journal*, Vol. 12, Iss. 1–2, 2014, p. 49.

17 Bo Yan and Chen Zhimin, 全球气候变化治理中的中国和欧盟 (Quanqiu Qihou Bianhua Zhili Zhong de Zhongguo he Oumeng; China and the EU in Global Climate Change Governance), *现代国际关系 (Xiandai Guoji Guanxi; Contemporary International Relations)*, Iss. 2, 2009, pp. 44–50.

However, due to the different situations they are facing and thus different motives behind their approaches to climate change negotiations, the two sides also face conflicts. For the EU, although it takes efforts to lead the world in reducing GHG emissions, it also expects China to commit more on carbon reduction. However, for China, it still has to figure out a balance between carbon reduction and economic growth, and thus cannot take a big step on carbon reduction—which is exactly expected by the EU. In addition, the EU and China also differ from one another on such issues like, identifying responsibilities regarding GHGs; setting a state's overall emissions reduction targets; finding climate funds for developing economies; using measurable, reportable, and verifiable schemes for evaluating a state's performance.¹⁸

2. The Evolution of EU-China Energy Cooperation

In 1981, a delegation from the EC DG ENER paid a visit to China. This was the first official contact between the EU and China in the energy field, and thus marked the beginning of EU-China energy cooperation. Following this visit, the EU and China soon implemented a few cooperation projects. However, energy had been playing second fiddle in the EU-China relations which was long dominated by economy and trade. In 1994, with the opening of the first EU-China Energy Conference, the EU and China commenced to further boost their energy relationship with the help of institutions.

Based on an observation of the institutions in the EU-China energy relationship, EU-China energy cooperation has gone through three phases: 1981–1993, when the EU and China commence to explore energy as a field for cooperation, and initiated a few projects; 1994–2011, when the EU and China witnessed the rise of energy in their bilateral relations, and established multiple cooperation institutions; 2012–present, marked by the opening of the EU-China High-level Energy Meeting, a new institutional framework of the EU-China energy relationship has been constructed and their cooperation has been lifted to a new level. Readers are reminded that due to the significance of energy in environmental governance and EU-China environmental

¹⁸ EC2, China-EU Energy Cooperation Roadmap 2020 (Concept Note), March 2015, pp. 17–19, See: http://documents.rec.org/publications/EC2_roadmap_2020_EN_web.pdf.

cooperation, the beginnings of the first and second phases of EU-China environmental cooperation and energy cooperation are the same. However, the activities that the EU and China took in these two phases certainly differ.

2.1 Phase I: 1981–1993

The visit of the DG ENER delegation to China in 1981 opened new avenues for cooperation. In 1982, the EU and China began to carry out the China-EU Energy Training Programme in energy management and energy efficiency in five Chinese cities: Hangzhou, Nanjing, Shanghai, Tianjin, and Chongqing. It was generally operated by ways of inviting EU experts to give training courses to Chinese engineers and managers, representing industry, government and regional organizations and, on the other side, inviting Chinese delegations to pay visits to the EU.¹⁹ In 1985, the EU and China signed the Trade and Cooperation Agreement and mentioned energy for the first time in an official agreement.²⁰ In 1986, the EU and China reached the Sino-European Dachen Island Complementary Energy Resource Demonstration Cooperative Project Agreement and commence to implement it in 1987 and completed in 1988. The Dachen island new energy resource project was one of the most successful and largest projects that the EU and China implemented in the 1980s. It was funded by the EU, and consisted of three sub-projects: the upper and lower Dachen seafloor cable network; terrestrial satellite reception, television transposer, and solar energy battery applications systems; and wind-powered electricity generation.²¹

In the first phase, the EU-China energy cooperation constituted nothing but official and half-official visits and a few cooperation projects. This is due to three reasons. First, for the EU, it lacked the power to enforce an energy policy on the European level. Second, for China, it was still enjoying the energy self-sufficiency during that period and energy was far to be serious concern for Chinese leaders. It did not have the strong motive to cooperate with international actors in energy. Third, globally, the attention paid to

19 EU-Sino Training Programmes in Energy Management and Energy Efficiency (Project Introduction), See:<http://www.centric.at/experiences/training-programme-on-energy-management-and-energy-efficiency-in-the-peoples-republic-of-china-and-in-europe-2000---2001/project-introduction>.

20 Zha Daojiong and Lai Suet Yi, China-EU Energy Governance: What Lessons to be Drawn? in Michèle Knodt, Nadine Piefer and Franziska Müller (eds.), *Challenges of European External Energy Governance with Emerging Powers*, Ashgate Publishing, 2015, p. 136.

21 A brief instruction of the Dachen island project, please refer to: JPRS Report, JPRS-CEN-89-007, 31 July 1989, Science & Technology China: Energy, pp. 12–14.

energy was still very limited, and energy was widely viewed as a domestic issue. It was not highlighted until energy consumption was linked with climate change, which has the potential to put the whole humankind into danger.

2.2 Phase II: 1994–2011

In 1994, the first meeting of the EU-China Energy Conference was held in Brussels. The EU-China Energy Conference was jointly organized by Chinese MOST and the EC DG ENER. It was held in Europe and China alternatively every two or three years. Marked with the opening of this conference, the EU-China energy relationship was institutionalized. In 1995, the EU released its first policy paper on China. In this policy paper, the EU recognized the seriousness of the increase of China's energy consumption and thus its potential damage to China's environment.²² In 1998, the EU published its second policy paper on China—Building a Comprehensive Partnership with China. In this document, energy enjoyed much more attention than it did in the last policy paper in 1995. In addition to the emphasis on the necessity of transferring the EU's environmental and energy know-how to China, it also recognized the necessity of the EU and China dialogue on Central Asia, as both sides were sharing strategic interests in this region.²³ In China's 2003 EU policy paper—the first of its kind, energy was listed as an element of economic cooperation. By doing so, China expressed its particular interest in collaborating with the EU on energy structure, clean energy, renewable energy, and energy efficiency and saving.²⁴ The establishment of the EU-China partnership on climate change in 2005 generated new opportunities for EU-China energy cooperation. Due to the key role of energy in dealing with climate change, it was given prime importance in their climate change partnership.²⁵

2.3 Phase III: 2012–Present

After a three-decade development, EU-China energy cooperation finally welcomed a

22 Communication of the Commission 1995, *A long term policy for China-Europe relations*, COM (95) 279 final, 5 July 1995, p. 16, See: http://www.eeas.europa.eu/archives/docs/china/docs/com95_279_en.pdf.

23 Communication from the Commission—Building a comprehensive partnership with China, Brussels, 25.03.1998 COM(1998) 181 final, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:51998DC0181&from=EN>.

24 China's EU Policy Paper, See: http://en.people.cn/200310/13/eng20031013_125906.shtml, last updated: October 13, 2003.

25 EU and China Partnership on Climate Change, September 2005, See: http://europa.eu/rapid/press-release_MEMO-05-298_en.htm.

new era, with the opening of the EU-China High-level Energy Meeting in May 2012. During that meeting, which was attended by the then Chinese vice-premier Li Keqiang and president of EC Barroso, the two sides announced the establishment of the EU-China Urbanization Partnership and the EU-China Strategic Energy Consumer Partnership, with the signing of “Joint Declaration on the EU-China Partnership on Urbanization” and “EU-China Joint Declaration on Energy Security,” respectively. In the “EU-China Joint Declaration on Energy Security,” the two sides agreed to “engage into a strategic energy consumer partnership through aligning concepts of energy security, increasing exchange about energy infrastructure construction and promoting open dialogue and cooperation.”²⁶ In addition, in the joint declaration, the EU and China expressed their concerns to global energy issues, and put their energy cooperation under an international dimension (Article five). The opening of this meeting and the establishment of these two institutions not only symbolically elevated energy to a new level in EU-China relations, but also helped to lay a new institutional foundation for the future of EU-China energy cooperation.

3. Institutions in EU-China Energy Cooperation

Energy is a forerunner in the history of EU-China environmental cooperation, and institutions have been playing key roles in promoting EU-China energy cooperation. Today, the EU-China High-level Energy Meeting, EU-China Energy Dialogue, EU-China Partnership on Urbanization, and EU-China Strategic Energy Consumer Partnership constitute the four main sectoral institutions of their energy cooperation.²⁷ The sub-sectoral institutions are defined as the institutions created for specific energy issues. Considering the fact that there are numbers of energy issues, this study uses the six priority areas identified by the EU and China (renewable energy, smart grids, energy

26 EU-China Joint Declaration on Energy Security, Brussels, 3 May, 2012, See: https://ec.europa.eu/energy/sites/ener/files/documents/20120503_eu_china_joint_declaration_energy_security_en.pdf.

27 In China-EU Energy Cooperation Roadmap 2020 (Concept Note), the EU-China Energy Dialogue, EU-China High-level Energy Meeting, and EU-China Partnership on Urbanization are identified as the three EU-China energy cooperation institutions. EC2, China-EU Energy Cooperation Roadmap 2020 (Concept Note), March 2015, See: http://documents.rec.org/publications/EC2_roadmap_2020_EN_web.pdf. For a full image of the institutional architecture of the EU-China energy cooperation, please refer to Annex III.

efficiency in buildings, clean coal, nuclear energy, and energy legislation) to conduct the analysis.

3.1 Sectoral Institutions in EU-China Energy Cooperation

3.1.1 *The EU-China High-level Energy Meeting*

Energy is one of the first institutionalized fields in EU-China relations. The EU-China Energy Conference, which was initiated in 1994, aimed to gather “all interested parties in energy-related issues, including scholars, enterprises and universities.”²⁸ In October 1996, the second meeting of the EU-China Energy Conference was held in Beijing. At that meeting, the officials from the then Chinese State Scientific and Technological Commission and the European Commissioner for Energy released a joint statement on energy cooperation, and established the EU-China Energy Working Group. Since then, the EU-China Energy Conference has been convened six more times in 1999, 2001, 2004, 2006, 2008, and 2010. Using the conference as collaborative platform, EU and Chinese officials explored the possibilities of cooperation in almost all the areas of energy, such as energy supply and security, energy market reform, clean energy, CCS, and nuclear energy.

In May 2012, the EU-China High-level Energy Meeting was convened in Brussels. With the attendance of the then Chinese Vice-Premier Li Keqiang and the then President of the EC Barroso, and around 200 representatives from industries, academia, and governments, this meeting lifted energy in EU-China relations to an unprecedented level. Although the EU-China High-level Energy Meeting is recognized as a sectoral institution, considering the the attendance of high-level EU and Chinese officials, it is put at a higher position among all sectoral institutions. This meeting reached fruitful achievements. Under the themes of energy development strategy and planning, and energy supply and securities, the European and Chinese officials discussed such topics as energy infrastructure construction, energy investment and trade, and energy geopolitics.²⁹ DAt this meeting, the EU and China released three documents on energy: “Joint Declaration on the EU-China Partnership on Urbanization,” “EU-China Joint

28 Pietro De Matteis, EU-China Cooperation in the Field of Energy, Environment and Climate Change, *Journal of Contemporary European Research*, Vol. 6, No. 4, 2010, p. 465.

29 刘铁男: 加强中欧能源合作 共同维护能源安全 (Liu Tienan: Jiaqiang Zhongou Nengyuan Hezuo, Gongtong Weihu Nengyuan Anquan; Liu Tienan: Strengthen China-EU Energy Cooperation, Ensure the Energy Security Jointly), 08/05/2012, See: http://www.gov.cn/gzdt/2012-05/08/content_2132036.htm.

Declaration on Energy Security” and “Joint Statement for Enhanced Cooperation on Electricity Markets.” The release of these documents declared the establishment of the EU-China Urbanization Partnership and the EU-China Energy Consumer Partnership.

3.1.2 The EU-China Energy Dialogue

The establishment of the EU-China Energy Dialogue was first proposed in 2005.³⁰ But, it was not until the eighth ECAS that the dialogue was officially established with the signing of the EU-China Dialogue on Energy and Transport Strategies Memorandum of Understanding. In this memorandum, the then EC DG for Energy and Transport (DG TREN) and the Chinese NDRC decided to set up a dialogue on energy and transport strategies. According to the memorandum, the dialogue was envisaged to be convened alternatively in China and Brussels, and mainly aimed at strengthening mutual understanding, promoting the exchange of information and opinions on energy related issues.³¹ The first dialogue on energy and transport strategies was held in 2006, and since 2009, a dialogue on energy has been organized.³² In 2010, the fourth meeting of the EU-China Energy Dialogue was held in Shanghai, with attendance on a ministerial level for the first time.³³ In 2011, at the fifth dialogue held in Brussels, the EU and China reached on four consensuses, among which the EU and China agreed that the EU-China High-level Energy Meeting would be held in 2012.³⁴ In addition, the two partners decided to set up a working group for transport and a working group for energy. The working group for energy is designed to introduce the state of play in each side’s energy industry, discuss the specific cooperation projects and problems in the EU-China

30 Zhang Min, 探析中欧能源合作政策、机制和方式 (Tanxi Zhongou Nengyuan Hezuo Zhengce, Jizhi yu Fangshi; Analysis of Policy and Mechanism of China-EU Energy Cooperation), *全球科技经济瞭望* (*Quanqiu Keji Jingji Liaowang; Global Science Technology and Economy Outlook*), Vol. 26, Iss. 3, 2011, pp. 26–34.

31 EU-China Dialogue on Energy and Transport Strategies-Memorandum of Understanding, September 2005, See: https://ec.europa.eu/energy/sites/ener/files/documents/2005_mou_eu_china_energy_transport_strategies.pdf.

32 Zha Daojiong and Lai Suet Yi, China-EU Energy Governance: What Lessons to be Drawn? in Michèle Knodt, Nadine Piefer and Franziska Müller (eds.), *Challenges of European External Energy Governance with Emerging Powers*, Ashgate Publishing, 2015, p. 136.

33 Zha Daojiong, Energy Security in China-EU Relations: Framing Further Efforts of Collaboration, in Jakub Godzimirski (ed.), *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses*, Palgrave Macmillan, 2016, p. 124.

34 European External Action Service, *5th Meeting of the Energy Dialogue between the European Commission and the National Energy Administration of China Brussels–Minutes*, 8 November 2011, See: http://eeas.europa.eu/archives/delegations/china/documents/eu_china/sustainable_urbanisation/document.pdf.

energy cooperation, and explore future cooperation possibilities.³⁵

Before the establishment of the energy working group by the EC DG TREN and NDRC, a working group organized by the EC DG ENER and MOST had been working since the 1996 EU-China Energy Conference. The creation of this group was mainly a response to the rapid growth of China's energy sector, which was closely linked with its economic growth and thus, growing energy import since 1993. The EU realized the potential challenges and benefits of China's energy production and consumption growth, and thus the necessity of a closer coordination and communication with China on this issue. Also, the EU and China shared with common challenges—"an increasing dependency on energy imports, the global character of environmental aspects and the liberalization of energy markets."³⁶ It was against this backdrop that this group was established.

The first meeting of the EU-China energy working group was summoned in Brussels in 1997. Since then, six more meetings were held by 2005. The EU-China energy working group provided "give a permanent and institutionalised base for the energy cooperation which started already in the early eighties."³⁷ During the 2005 meeting of the EU-China Energy Working Group, the EU and China adopted two action plans—the Action Plan on Clean Coal and Action Plan on Industrial Cooperation Energy Efficiency and Renewable Energies. In the Action Plan on Clean Coal, both parties agreed to carry out their cooperation from such aspects like the outlook of the utilization of China's coal resource, the evaluation of the China's long-term storage potential of CO₂, and coalbed methane.³⁸ The latter included various cooperation areas from bio-fuels and solar energy to the identification of potential for offshore wind projects. This action plan also suggested expanding the compilation of energy audits to identify saving potential, improve motor and air compressor efficiency, replacing inefficient industrial boilers,

35 EU-China Dialogue on Energy and Transport Strategies-Memorandum of Understanding, September 2005, See: https://ec.europa.eu/energy/sites/ener/files/documents/2005_mou_eu_china_energy_transport_strategies.pdf.

36 The European Union and China approved the creation of an Energy Working Group, See: http://europa.eu/rapid/press-release_IP-96-1242_en.htm, last update: 24 January 2017.

37 *Ibid.*

38 Zhang Min, 探析中欧能源合作政策、机制和方式 (Tanxi Zhongou Nengyuan Hezuo Zhengce, Jizhi yu Fangshi; Analysis of Policy and Mechanism of China-EU Energy Cooperation), *全球科技经济瞭望* (*Quanqiu Keji Jingji Liaowang; Global Science Technology and Economy Outlook*), Vol. 26, Iss. 3, 2011, pp. 26–34.

identify potential for combined heat and power deployment and improving the efficiency of lighting.³⁹ These two action plans were all absorbed into the EU-China Partnership on Climate Change, established a few months later in 2005.

From 2005 to 2015, the EU-China energy dialogue had been held six times (the most recent dialogue was recorded in 2013). During the fifth dialogue meeting held in 2011, the EU and China agreed on four consensuses. First, they agreed that energy efficiency, clean energy, and energy management should be taken as the points of the EU-China future cooperation; Second, they agreed to upgrade their communication and cooperation on nuclear energy; Third, the EU and China agreed to strengthen their management and guidance on the EC2 and promote their cooperation on clean energy and technologies; Fourth, the EU and China agreed that the EU-China High-level Energy Meeting should be convened in 2012.⁴⁰ In 2013, the EU and China held the sixth meeting of EU-China Energy Dialogue in Beijing. Three themes were emphasized at that meeting: electricity market reform and integration of innovative technologies, gas legislation and gas market reform in medium-to-long term, energy strategy and sustainable use of energy.⁴¹

What is also remarkable is that the EC2 was launched in 2009 within the framework of EU-China Energy Dialogue. It aimed at “assisting China’s efforts to develop a low-carbon and more energy-efficient economy,” and also fostered “exchanges and workshops between EU and Chinese officials, industry representatives, and academic experts around such issues as clean coal, renewable energy and grid integration, and smart grids.”⁴²

3.1.3 The EU-China Urbanization Partnership

39 EC2, China-EU Energy Cooperation Roadmap 2020 (Concept Note), March 2015, p. 15, See: http://documents.rec.org/publications/EC2_roadmap_2020_EN_web.pdf.

40 Zhao Jianhua, 第五次中欧能源对话达成四点共识 (Diwuci Zhongou Nengyuan Duihua Dacheng Sidian Gongshi); Four Consensuses Achieved in the Fifth China-EU Energy Dialogue, *Chinanews*, See: <http://www.chinanews.com/ny/2011/11-09/3448985.shtml>; European External Action Service, Fifth Meeting of the Energy Dialogue between the European Commission and the National Energy Administration of China Brussels–Minutes, 8 November, 2011, See: http://eeas.europa.eu/delegations/china/documents/eu_china/sustainable_urbanisation/document.pdf.

41 Delegation of the European Union to China—Energy, See: http://eeas.europa.eu/delegations/china/eu_china/energy/index_en.htm.

42 Zha Daojiong, Energy Security in China-EU Relations: Framing Further Efforts of Collaboration, in Jakub Godzimirski (ed.), *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses*, Palgrave Macmillan, 2016, pp. 124–125.

The EU-China urbanization cooperation on the institutional level was first proposed in 2012. In May 2012, back to back with the High-level Energy Meeting, the first High-level Conference of the EU-China Partnership on Urbanization was held in Brussels, with the attendance of the then Chinese vice-premier Li Keqiang and the vice-president of European Committee Almunia. That conference generated the “Joint Declaration on China-EU Partnership on Urbanisation,” which declared the establishment of the EU-China Partnership on Urbanization. In that document, the EU and China “recognize that the common interests and synergy between our respective long-term economic strategies have laid a sound foundation and brought historical opportunities in tackling together the challenges of urbanization and jointly promoting healthy urbanization development.”⁴³ Their partnership on urbanization aims at “tackling challenges together through cooperative efforts between stakeholders at all appropriate levels, including national, regional and local levels.”⁴⁴ It is supported by five pillars: cooperation between governments, cooperation between cities, S&T, business and finance, and participation of the society.⁴⁵ It addresses fourteen cooperation subjects, such as sustainable development of urban industrial economy, infrastructure investment and financing mechanisms, energy supply and demand management, green buildings, and urban ecological protection, environmental protection and treatment. Their partnership on urbanization is coordinated by the EC DG ENER and the Chinese NDRC. The EU-China Urbanization Forum was established and held annually in the EU and China.⁴⁶

The first EU-China Urbanization Forum was held in Beijing in November 2013. This forum was organized with five sub-forums on innovative city, smart city, green city, cultural city, and urban mobility. It reached a number of achievements, among which, the signing of 12 cooperation agreements between European and Chinese cities was one of the most significant. Within the framework of the EU-China Urbanization

43 Joint Declaration on China-EU Partnership on Urbanisation, Brussels, 3 May 2012, See: https://ec.europa.eu/energy/sites/ener/files/documents/20120503_eu_china_joint_declaration_urbanisation_en.pdf.

44 *Ibid.*

45 EU-China Urbanization Cooperation, The General Situation of Our Practical Cooperation, See: http://www.ceuc.org.cn/en/page.php?cid=4&id=News_89.

46 Joint Declaration on China-EU Partnership on Urbanisation, Brussels, 3 May 2012, See: https://ec.europa.eu/energy/sites/ener/files/documents/20120503_eu_china_joint_declaration_urbanisation_en.pdf.

Partnership, these cities are implementing fruitful cooperation. For example, Changzhou city and its partnership city—Essen (Germany) are now promoting the construction of the “Sino-German Innovation Park,” meanwhile Haiyan city and Sounderborg (Denmark) are cooperating in turning the ZERO-house concept into reality.⁴⁷ The second EU-China Urbanization Forum was organized in Brussels in 2015, with the joint attendance of the Chinese Premier Li Keqiang and the EC President Jean-Claude Juncker. This forum was themed with “Cooperation, Innovation and Practice,” and addressed four topics: smart cities, sustainable urban mobility, climate change and covenant of mayors, and EU-China forum on sustainable cities.

In addition to the regularly-held EU-China Urbanization Forum, the EU-China Mayors Forum and the EU-China Exhibition on Urban Development also joined the Urbanization Forum to “ensure an innovative way of looking at China’s urbanization challenges.”⁴⁸ The EU-China Mayors Forum was first proposed by the EU and Chinese leaders at their 14th annual summit held in February 2012. In September 2012, the first forum was organized in Brussels. As the most remarkable outcome of this forum, 14 Chinese mayors and an equivalent number of EU counterparts signed the “EU-China Mayors Charter.” Together, they committed to share their experiences and know-how in building low-carbon eco-cities and promoting sustainable development.⁴⁹ In November 2013, accompanying the first EU-China Urbanization Forum, the EU-China Exhibition on Urban Development was organized in Beijing and gathered 158 exhibitors, with 123 from China and 35 from Europe.

As the then President of the European Council, Herman Van Rompuy said: “we [the EU and China] are increasingly becoming part of the solution to each other’s domestic challenges.”⁵⁰ The enormous potential of the EU-China Urbanization Partnership is without doubt, not only politically and economically, but also environmentally. “The partnership is an opportunity to contribute to China’s steady development and to the promotion of sustainable Chinese urbanization. Meanwhile, Europe can also draw

47 A list of these projects, please refer to: The EU-China Urbanization Partnership, http://ec.europa.eu/energy/sites/ener/files/documents/12_cities.pdf.

48 EC2, China-EU Energy Cooperation Roadmap 2020 (Concept Note), March 2015, p. 15, See: http://documents.rec.org/publications/EC2_roadmap_2020_EN_web.pdf.

49 The EU-China Mayors Charter, 20 September, 2012, See: http://www.covenantofmayors.eu/IMG/pdf/EUChina_MayorsCharter.pdf.

50 *Urbanization: China and Europe*, Foreword by Herman Van Rompuy, China-Europa Forum, p. I, See: https://www.china-europa-forum.net/IMG/pdf/urbanisation-china_and_europe.pdf.

interesting lessons from China's urbanization that can be helpful in its own urbanization process."⁵¹ From the establishment of the partnership in 2012 to June 2015, more than 130 cooperation projects had been forged,⁵² including the Europe-China Eco-cities Link project. Launched in March 2015, with the support of EUR 9.3 million, its implementation will last until November 2017. This project aims to "assist Chinese cities in their endeavors to meet the targets set in the 12th FYP by providing technical assistance to the Chinese Ministry of Housing and Urban-Rural Development (MOHURD), sharing experiences on sustainable urbanization and other relevant policies between Europe and China."⁵³ With the participation of 10 Chinese cities, this project is envisaged to develop projects in nine key sectors, such as clean energy, green buildings, solid waste management, and green industry.⁵⁴

3.1.4 The EU-China Strategic Energy Consumer Partnership

The "EU-China Joint Declaration on Energy Security"⁵⁵ which was released in 2012 ushered in the creation of the EU-China Strategic Energy Consumer Partnership. In this document, the two sides agreed to "engage into a strategic energy consumer partnership through aligning concepts of energy security, increasing exchange about energy infrastructure construction and promoting open dialogue and cooperation."⁵⁶ Within the framework of this partnership, in July 2012, the two parties agreed on the establishment of the EU-China Energy Security Working Group.

In December 2012, a high-level forum on EU-China energy security cooperation was held. This forum aimed to discuss the further cooperation within the framework of the "EU-China Joint Declaration on Energy Security." It introduced that the EU and China would take three major aspects for future cooperation, including enhancing

51 Pedro Ballesteros, "EU-China Partnership on Urbanization" is of High Added Value to EU-China Cooperation on Urbanization, in China-Europa Forum, *Urbanization: China and Europe*, China-Europa Forum, p. 4, See: https://www.china-europa-forum.net/IMG/pdf/urbanisation-china_and_europe.pdf.

52 Li Keqiang Attends and Addresses China-EU Urbanization Partnership Forum 2015, 30/06/2015, See: http://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1278057.shtml.

53 Project Fact Sheet—Sustainable Urbanization-Europe-China Eco-cities Link Project, See: <http://eu-chinasmartcities.eu/sites/default/files/EC%20LINK%20Factsheet%20-%20English.pdf>.

54 Europe-China Eco-cities Link Project Launch (25/03/2015), See: http://eeas.europa.eu/delegations/china/press_corner/all_news/news/2015/20150326_en.htm.

55 A new *EU-China Joint Declaration on Energy Security* was signed during the 16th EU-China Summit, 2013, in responding to the restructuring of the NEA and related change of leadership.

56 EU-China Joint Declaration on Energy Security, Brussels, 3 May, 2012, See: https://ec.europa.eu/energy/sites/ener/files/documents/20120503_eu_china_joint_declaration_energy_security_en.pdf.

communication institutions between two sides through working groups and platforms, achieving consensus on the roadmap on energy through legislation, technology and market-based institutions and encouraging businesses to cooperate. At that forum, three roundtable sessions on cooperation in renewables, oil/gas and clean coal, and nuclear safety were organized.⁵⁷ In February 2013, the first meeting of the EU-China Energy Security Working Group took place in Beijing, at which the process for drafting the EU-China Roadmap on Energy Cooperation was officially initiated. A concept note of this roadmap was published in March 2015, and the EU-China Roadmap on Energy Cooperation (2016–2020) was finally agreed in June 2016. This roadmap is viewed as a sign that cooperation on energy for the EU and China is becoming more important than in the past.⁵⁸

3.2 Sub-sectoral Institutions in EU-China Energy Cooperation

3.2.1 Renewable Energy

Today, the EU-China cooperation on renewable energy is mainly implemented through the Institute for Clean and Renewable Energies (ICARE), jointly built by the EU and China in March 2012. This institute locates at Wuhan city, and is co-funded by the EU and China with a budget of EUR 10 million from the Europe (70.52 percent of total budget).⁵⁹ ICARE mainly undertakes the educational activities by its Master diploma education, vocational training, and cooperated research and consultancy activities in the fields of solar energy, wind energy, biomass, geothermal energy, and energy efficiency.⁶⁰

In addition to this institute, a workshop on renewable energy and grid integration was organized in May 2010 following the third meeting of the EU-China Energy Dialogue. This workshop was attended by 38 Chinese officials and representatives from Chinese companies. It also consisted of a study-tour to visit the off-shore wind farm in Belgium, a two-day workshop about renewable energy and grid integration, a meeting with the

57 EC2—Europe China Clean Energy Centre (13/12/2012), See: http://eeas.europa.eu/delegations/china/press_corner/all_news/news/2012/20121213_01_en.htm.

58 Information obtained through interview.

59 Project fiche—EU-China Institute for Clean and Renewable Energy (ICARE), See: https://eeas.europa.eu/delegations/china/projects/list_of_projects/20141_en.htm.

60 China-EU Institute for Clean and Renewable Energy at Huazhong University of Science and Technology—Mission and Vision, See: <http://icare.hust.edu.cn/EN/1/5/2013-08-11/350.html>.

European Network of Transmission System Operators, a study-tour to visit Spain and solar panels in Belgium. The Chinese delegation that participated in the workshop is described “with particular interest, highlighting China’s willingness to invest in their grids so as to make the best use of their renewable energy sources.”⁶¹

3.2.2 Smart Grids

The year of 2010 can be described as “the year of smart grids” for the EU and China. Led by a group of European enterprises, the EU-China Smart Grid Working Group was organized in January 2010. The Smart Grid Working Group is a sub-working group of the EU-China Energy Working Group. It aims to assist European companies to respond to the market growth and policy changes in China’s smart grid sector. It is composed of power equipment manufacturers, IT solution developers as well as other important stakeholders and seeks to establish effective and constructive dialogues on relevant issues among key stakeholders to facilitate smart grid project participation and coordinate standardization and certification processes.⁶² In 28th and 29th April 2010, a two-day seminar on Smart Grid was held at EC2, Beijing.⁶³ In 20th May 2010, the “Sino-EU Smart Grid Technology and Standardization Forum 2010” was organized in Beijing. Attended by over 320 participants from the EU and China, experiences on smart grid planning, construction and standardization, and ideas on the future development and technology solutions of smart grid were exchanged.⁶⁴

In November 2010, the “GRIDS 2010” conference was convened by the European Wind Energy Association in Berlin. Taking advantage of this opportunity, the DG ENER organized a meeting among European and Chinese experts on smart grids and renewables, in particular wind energy. This is the first tangible result of cooperation by the Commission and the Chinese NEA in smart grids. Attracting 16 European and 10 Chinese participants, it functioned as the first of a series of events set up at expert level

61 Concrete cooperation projects under the EC-China Energy Dialogue, See: https://ec.europa.eu/energy/sites/ener/files/documents/concrete_cooperation_projects_ec_china_energy_dialogue.pdf.

62 European Business in China Position Paper 2011/2012: Smart Grid Sub-Working Group, European Chamber, See: <http://www.eurochamber.com.cn/en/publications-archive/81>.

63 Asia Centre, Smart Grid Technologies in China and Europe, See: <http://www.centreasia.eu/evenement/smart-grid-technologies-in-china-and-europe-28042010>; EU-China Seminar on Smart Grids, See: <http://www.centreasia.eu/evenement/EU-china-seminar-on-smart-grid>.

64 2010中欧智能电网技术与标准化论坛在京召开, (2010 Zhongou zhineng dianwang jishu yu biao zhun hua luntan zai jing zhaokai; The Sino-EU smart grid technology and standardization forum 2010 is held in Beijing), *China Electricity Council*, 25/05/2015, See: <http://www.cec.org.cn/yaowenkuaidi/2010-11-26/2880.html>.

to promote mutual understanding and possible cooperation between EU and Chinese industries. The participants discussed topics on smart grid technologies and challenges for large-scale integration of variable renewable energy sources, technologies for long-distance transmission, and grid connection requirements for wind energy.⁶⁵ Following the first seminar on smart grid, a second seminar was organized in December 2010, with the participation of the EC.

3.2.3 Clean Coal

The EU-China interaction on clean coal has been basically by means of the EC2 set up in 2010. The EC2 was a five-year cooperation project mainly funded by the EU and organized by the EC, the NEA, and the Ministry of Commerce of China. Its main tasks were to promote the increased use of clean energy in China and to support the Chinese government's efforts to shape a more sustainable, environmental friendly and efficient energy sector.⁶⁶ Different from the various dialogues between the EU and China that happen occasionally, the EC2 was a permanent body and constituted "a stable and independent platform for exchange on energy and environmental issues," which was expected "not to be subject to eventual occasional political tensions that might arise between China and the EU."⁶⁷

In addition, two workshops on clean coal were also held. The first workshop was held in October 2008 in Beijing, and attracted over 30 participants, including 16 representatives from the EU and 11 representatives from China. It covered such areas as emission monitoring and control, coal gasification and coal to liquids, and CDM and CO₂ capture. The second workshop on clean coal was convened in October 2010. It focused on power plant modernization and clean coal-fired power plant technologies, and attracted around 80 participants from Europe and China.⁶⁸

3.2.4 Nuclear Energy

Now the EU-China bilateral cooperation in nuclear energy is generally within the

65 Concrete cooperation projects under the EC-China Energy Dialogue, See: https://ec.europa.eu/energy/sites/ener/files/documents/concrete_cooperation_projects_ec_china_energy_dialogue.pdf.

66 EU-China Clean Energy Centre, See: https://eeas.europa.eu/delegations/china/documents/eu_china/ec2-leaflet.pdf.

67 Pietro De Matteis, EU-China Cooperation in the Field of Energy, Environment and Climate Change, *Journal of Contemporary European Research*, Vol. 6, No. 4, 2010, p. 465.

68 Concrete cooperation projects under the EC-China Energy Dialogue, See: https://ec.europa.eu/energy/sites/ener/files/documents/concrete_cooperation_projects_ec_china_energy_dialogue.pdf.

framework of Agreement between Euratom and P.R. China for R&D Cooperation in the Peaceful Uses of Nuclear Energy signed by Euratom and the MOST in 2008. It is implemented by a joint steering committee co-chaired by the DG Research and Innovation representing Euratom, and the MOST, the China Atomic Energy Authority, and the National Nuclear Safety Administration. The Steering Committee has met annually since 2011, and four sub-committees had been created: a sub-committee on fission-coordinated actions, a sub-committee on nuclear security and safeguards, a sub-committee on nuclear safety, and a sub-committee on fusion energy research.⁶⁹

3.2.5 Energy Efficiency in Buildings

The EU-China cooperation on energy efficiency in the building sector is generally carried out within the framework of “The Memorandum of Understanding on Cooperation Framework on Energy Performance and Quality in the Construction Sector” signed by the then EC DG for Enterprise and Industry, DG TREN, and the Chinese MOHURD, at the 12th ECAS held in 2009. The signing of this memorandum opened “the way for improving the energy efficiency of China’s buildings and construction process working jointly on the management system of energy performance certification of buildings, energy standards for buildings as well as research and technologies.”⁷⁰ It is viewed as a major breakthrough in EU-China bilateral cooperation since the EU became able to work with China in its highest energy consuming sector for the first time,⁷¹ and thus, taken as the most significant consequence of the 12th EU-China summit.⁷²

By the time of writing, the EU and China have implemented a series of dialogues, workshops, seminars, and cooperation projects on energy efficiency in buildings. One of the most significant platforms that the EU and China are utilizing to promote their

69 Delegation of the European Union to China—Themes and Priority Areas, See: http://eeas.europa.eu/delegations/china/eu_china/research_innovation/themes_priority_areas/index_zh.htm; Euratom Programme—Euratom Fission Info Session, “International cooperation-overview and specific action,” September 2015, p. 10, See: http://ec.europa.eu/inea/sites/inea/files/sl1.4_euratom-fission-infoday-az-international_cooperation.pdf.

70 EC2, China-EU Energy Cooperation Roadmap 2020 (Concept Note), March 2015, p. 16, See: http://documents.rec.org/publications/EC2_roadmap_2020_EN_web.pdf.

71 Concrete cooperation projects under the EC-China Energy Dialogue, See: https://ec.europa.eu/energy/sites/ener/files/documents/concrete_cooperation_projects_ec_china_energy_dialogue.pdf.

72 Sijbren De Jong and Jan Wouters, Making the Transition: EU-China Cooperation on Renewable Energy and Carbon Capture and Storage, Leuven Centre for Global Governance Studies, Working Paper No. 66, June 2011.

dialogues is the annual International Conference on Green and Energy-Efficient Building & New Technology and Products Expo (IGEBC) launched by the MOHURD. Europe has been an active participant since the opening of the first conference in 2005. At the seventh IGEBC in 2011, a seminar on building energy efficiency evaluation and certification system was organized,⁷³ while an EU-China seminar on near-zero energy buildings was organized at the eighth conference in 2012.⁷⁴ The year of 2013 witnessed the opening of another conference between the EU and China on Policies for the Benchmarking of Large-scale (Commercial) Buildings,⁷⁵ while two activities were organized at the 2014 IGEBC: a workshop on the EU-China Exchange on Building Energy Efficiency Technologies and Policies, and the EU-China Conference on Strategies for the Development of Energy-Efficient Buildings.⁷⁶

Moreover, some other measures were taken by the EU and China to nurture their cooperation in this field. For example, a seminar on eco-building was held in Zhengzhou, China, in 2008, and a Sino-European Energy-efficient Building Center was established in 2011. In 2016, the Up-scaling and Mainstreaming Sustainable Building Practices in Western China project was launched. This project aims at “scaling up sustainable building practices in less developed western China, reducing climate and resource impacts of the building sector, and contributing to sustainable socio-economic growth in China.”⁷⁷ It seeks to foster sustainable building practices among micro, small, and medium enterprises in Chongqing city and Yunnan province with replication potential for the western China. With a total budget of EUR 2.8 million, it expects to

73 中欧建筑能效测评认证体系研讨会 (Zhong Ou Jianzhu Nengxiao Ceping Renzheng Tixi Yantao Hui; China-EU Seminar on Building Energy Efficiency Evaluation and Certification System), 23/03/2011, See: <http://www.chinagb.net/gbmeeting/igebc7/richeng/20110323/75912.shtml>.

74 中欧近零能耗建筑技术研讨会 (Zhong Ou Jinling Nenghao Jianzhu Jishu Yantao Hui; EU-China Seminar on Near-Zero Energy Buildings), 26/03/2016, See: <http://www.chinagb.net/gbmeeting/igebc8/xinxi/20120326/85052.shtml>.

75 EU-China Conference on Policies for the Benchmarking of Large-scale (Commercial) Buildings, 27/03/2013, See: <http://www.chinagb.net/gbmeeting/igebc9/english/yc/20130327/94753.shtml>.

76 An introduction of these two events, please refer to: Wuppertal Institut, Green and Energy-Efficient Building-Panel session on of the bigEE project at the 10th IGEBC in Beijing, <http://wupperinst.org/en/a/wi/a/s/ad/2528/>; EU-China exchange on building energy efficiency technologies and policies, http://www.bigee.net/media/filer_public/2014/03/25/bigee_workshop_agenda_igebc_20140318_en.pdf; EU-China Conference on Strategies for the Development of Energy-Efficient Buildings, <http://www.euctp.org/jdownloads/Cross-cutting%20Policies%20%20EU-China%20Conference%20on%20Strategy%20and%20Development%20in%20Energy%20Efficiency%20of%20Buildings%20A321C5/a321c5-agenda-en.pdf>.

77 Switch Asia, Up-scaling and mainstreaming sustainable building practices in western China, See: <http://www.switch-asia.eu/projects/western-china-susbuild/>.

reach its targets in four years by the end of 2019.⁷⁸

3.2.6 Energy Legislation

Since 2005, the Chinese authorities have commenced to draft an energy law. In 2007, a draft of the energy law was completed, but at the time of writing, it is still being reviewed. During this progress, China had expressed its interest in the international experience on energy legislation, including that of the EU. In June 2009, a meeting between State Council Legislative Affairs Office (SCLAO) officials and officials from the EC DG TREN took place at the premises of SCLAO. At the meeting, the two sides confirmed their intention to cooperate on the drafting process of the new energy law. As a consequence, in November 2009, the SCLAO and EC jointly organized a workshop on energy law in Beijing, which was attended by around 70 officials and specialists from China and the EU. This workshop focused on topics such as the relationship between general laws and specific laws on energy, energy planning, role of the market mechanism, energy prices and pricing, fossil energy, new and renewable energy, and energy technology.⁷⁹

4. The Roles and Limits of Institutions in EU-China Energy Cooperation

The EU and China have constructed an institutional architecture for their energy cooperation. These institutions at two levels have been playing crucial roles in promoting EU-China energy cooperation. However, they are still suffering some limits.

4.1 The Roles of Institutions

The institutions in EU-China energy cooperation have been playing three roles. First,

78 中国西部可持续建筑推广和主流化论坛在綦江举行 (Zhongguo Xibu Kechixu Jianzhu Tuiguang he Zhulihua Luntan zai Qijiang Juxing; The Forum of Up-scaling and mainstreaming sustainable building practices in western China is held in Qijiang), *Xinhuanet*, See: <http://www.cq.xinhuanet.com/2016/qjzlt/index.htm>.

79 Activity 14/EU-China Workshop on Energy Law, EU-China Policy Dialogues Support Facility II, See: <http://www.eu-chinapdsf.org/EN/pdsf1activity.asp?NewsId=1226>; Concrete cooperation projects under the EC-China Energy Dialogue, See: https://ec.europa.eu/energy/sites/ener/files/documents/concrete_cooperation_projects_ec_china_energy_dialogue.pdf.

they have been helping enhance bilateral understanding between the EU and China on energy. Working as platforms for the parties to enhance bilateral and mutual understanding, and thus eliminate misunderstandings is one of the basic functions of institutions. Similar to other sectoral institutions in EU-China environmental cooperation, this function of institutions has been exploited in EU-China energy cooperation. For example, among the sectoral institutions, both the Energy Dialogue and the Strategic Energy Consumer Partnership are basically functioning as dialogue platforms, while at the sub-sectoral level, a number of workshops, seminars, and forums are also playing such roles.

Second, institutions have been promoting the implementation of cooperation projects. In the EU-China energy relationship since 1981, although not all the implementation of projects can be recognized with an institutional background, some of them clearly benefited from institutions. For example, city leaders from Europe and China reached agreements for bilateral cooperation by taking the second EU-China Urbanization Forum as an occasion. Also, they exchanged their experience in eco-cities building and expressed their interest in future cooperation at the Mayors Forum.

Third, institutions have been assisting in creating new institutions. By doing this, multilevel institutions have been established and thus the overall institutional architecture has been constructed. For example, as the main achievements of the EU-China High-level Energy Meeting convened in 2012, the EU-China Urbanization Partnership and the EU-China Strategic Energy Consumer Partnership were established.

These roles of institutions have been evidenced by the previous analysis of institutions in EU-China cooperation in environmental policy, environmental technology, and climate change, and also the detailed analysis of EU-China energy cooperation in this chapter. What is better revealed by this case study is that the role of institutions in helping create new institutions is demonstrated to be not one-way, which means that the establishment of higher-level institutions can also benefit from the lower-level institutions. For example, two action plans that were adopted at the 2005 meeting of EU-China Energy Working Group—Action Plan on Clean Coal and Action Plan on Industrial Cooperation Energy Efficiency and Renewable Energies, were all finally involved in the EU-China Partnership on Climate Change. In addition, at the fifth

meeting of the EU-China Energy Dialogue, which was jointly attended by the European Commissioner for Energy and the Director of the Chinese NEA, the EU and Chinese energy officials agreed that the EU-China High-level Energy Meeting would be held in 2012.

4.2 The Limits of Institutions

Although an institutional framework has been constructed and promoting EU-China energy cooperation, it is still facing some limits. First, the current institutions are largely empty. Although, in the history of EU-China energy cooperation, institutions have been playing roles more than dialogue platforms, within the current institutional framework, their role of promoting dialogues is more prominent while their ability to make decisions is weak. For example, at the sectoral level of EU-China energy cooperation institutions, except the High-level Energy Meeting which was held only once by 2016, the Energy Dialogue and the Strategic Energy Consumer Partnership both are designed to “strengthen mutual understanding,” “promote the exchange of information,” or “promote open dialogue and cooperation.” An overemphasis to the dialogue function has led to the critique to institutions as “talk shops.”⁸⁰ Certainly, this does not necessarily mean that institutions are not important. They are necessary, but need to be more practical and lead to tangible consequences. Therefore, how to put things into practice is also one of the great challenges in the EU-China energy relationship.⁸¹

Second, the potential of current institutions is not fully explored. Among the institutions of EU-China energy cooperation, some institutions do not fulfil their roles and are not functioning as they are envisaged, which results in a gap between the envisagement and the practical operation. For example, the Urbanization Forum is designed to be held annually, however, it was not convened in 2014 and only a signing ceremony was recorded in 2016. Besides, the energy working group that was created in 2005 shows no evidence of activity.

Third, the current institutional framework is fragmented. This framework particularly lacks a high-level decision-making institution. In the history of EU-China energy cooperation, it was the High-level Energy Meeting (2012) and the EU-China Energy

80 Information obtained through interview.

81 Information obtained through interview.

Conference (1994–2010) that had been playing as high-level decision-making institutions. Now, there is no similar institution playing such a role, due to the High-level Energy Meeting was not held again after 2012 (by 2016). One should be reminded that except the EU-China Partnership on Urbanization and the EU-China Strategic Energy Consumer Partnership, which focus on specific areas, the only institution that can be expected to provide a general guidance for the EU-China energy cooperation is the EU-China Energy Dialogue. However, the Energy Dialogue is implemented by the Chinese NEA and the European Commissioner for Energy, which is a lower-level institution than the High-level Energy Meeting, and is mainly designed to promote the exchange of information and opinions. Meanwhile, the ECAS which involves a broad range of issues should not be expected to provide specific guidance for the EU-China energy cooperation.

Fourth, the current institutions lack representativeness. One of the notable features of EU-China energy institutions (the EU-China Energy Conference and the High-level Energy Meeting) before 2012 was their extensive representativeness. Today, the only existing channel that the EU and China can discuss general energy issues—the EU-China Energy Dialogue, is only attended by a small number of energy officials. This situation also applies to the EU-China Strategic Energy Consumer Partnership. In addition, although within the framework of EU-China Urbanization Partnership, the Urbanization Forum, Mayors Forum, and the Exhibition on Urban Development can also provide platforms for various EU and Chinese relevant participants to conduct dialogue and cooperation, the dialogues and cooperation within this framework are more focused on urbanization. More gravely, the Mayors Forum and the Exhibition were only organized once by 2016, while the Urbanization Forum is not held regularly. Compared with the EU-China Energy Conference and the High-level Energy Meeting, which gathered a large number of representatives from such as governments, enterprises, research and development sectors, the current institutions particularly lack representativeness.

Fifth, the relationship between the institutions in the energy field and other fields is not well coordinated. Energy is a very broad issue, which also relates to such issues as trade, technology, environment, and climate change. Thus, the institutional arrangements in these fields may overlap. Considering the EU-China Urbanization Partnership as an

example, it could share similar targets and functions with the EU-China Low-carbon Cities Partnership, which aims to “promote mutual exchange on policies, planning and good practices for low-carbon and climate resilient cities,”⁸² and is actually within the framework of the EU-China climate change cooperation. Within this partnership, the EU-China Low-carbon Cities Conference was held in June 2016, and was attended by the Director-General of DG ENER and the Chinese Special Representative on Climate Change Issues.

Since 1981, EU-China energy cooperation has went through three phases. The first phase can be regarded as the infancy of EU-China energy cooperation. It ranges from 1981 to 1993 and is featured with occasional contacts and a small number of cooperation projects. The second phase (1994–2011) witnessed a rapid development of EU-China energy cooperation. During this phase, the two sides established a series of institutions on energy (such as the EU-China Energy Conference) and launched more energy cooperation projects. Marked with the establishment of the EU-China Urbanization Partnership and the EU-China Energy Consumer Partnership in 2012, energy has been lifted to a strategic level in EU-China relations.

The EU and China are motivated by different consideration in their energy cooperation. For China, it wants to learn from the EU’s experiences and adapt European technologies, and take advantage of the assistance of the EU to transfer its economic growth pattern and thus to achieve a more sustainable development.⁸³ For the EU, the potential economic interests of a soaring Chinese energy market, the diplomatic value of influencing Chinese energy policy and thus avoiding potential confliction with China in global energy market are the two strongest motives for its energy cooperation with China. In the last around four decades, the underlying logic for Europe to conduct energy cooperation with China was providing assistance to China in line with European development strategy. Aid implementation helped the Chinese market become familiar

82 EU-China Joint Statement on Climate Change, See: http://eeas.europa.eu/delegations/new_zealand/press_corner/all_news/news/2015/eu_china_statement_cc_en.htm.

83 Pietro De Matteis, EU-China Cooperation in the Field of Energy, Environment and Climate Change, *Journal of Contemporary European Research*, Vol. 6, No. 4, 2010, pp. 449–477; Zha Daojiong and Lai Suet Yi, China-EU Energy Governance: What Lessons to be Drawn? in Michèle Knodt, Nadine Piefer and Franziska Müller (eds.), *Challenges of European External Energy Governance with Emerging Powers*, Ashgate Publishing, 2015, p. 141.

with European energy equipment, technologies, and management know-how. This might help lay the foundation for European companies to enter and expand in the Chinese market.⁸⁴

Regarding the numerous institutions and projects that the EU and China have implemented, EU-China energy cooperation can be considered as a success for both sides. However, as commented by John Fox and François Godement, this kind of success has been “limited to developments which China wants to see happen anyway.” “The EU has failed to come up with a common approach: European energy companies go their own way in China, and Member States set up their own dialogues. China remains reticent and prioritizes its own security and development.”⁸⁵

84 EC2, China-EU Energy Cooperation Roadmap 2020 (Concept Note), March 2015, See: http://documents.rec.org/publications/EC2_roadmap_2020_EN_web.pdf.

85 John Fox and François Godement, A Power Audit of EU-China Relations, European Council on Foreign Relations, April 2009, p. 44, See: http://www.ecfr.eu/page/-/ECFR12_-_A_POWER_AUDIT_OF_EU-CHINA_RELATIONS.pdf; See also: Zha Daojiong, Energy Security in China-EU Relations: Framing Further Efforts of Collaboration, in Jakub Godzimirski (ed.), *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses*, Palgrave Macmillan, 2016, pp. 113–133.

Conclusions and Future Studies

1. Conclusions

In the previous four chapters, I respectively discussed the EU and China's environmental policy and diplomacy, institutions in the EU-China cooperation in environmental policy, environmental technology, and climate change, and used energy as a case study to push the analysis into depth. Most importantly, in chapter five and six, I outlined the EU-China environmental cooperation institutional architecture and analyzed their roles and limits. After all these endeavors, I attempt to answer the research questions of this study in this conclusion section: 1) What are the institutions in EU-China environmental cooperation? And how do they come into existence? 2) What are the roles of institutions in EU-China environmental cooperation? And how do they promote EU-China environmental cooperation? 3) What are the limits of institutions in EU-China environmental cooperation? 4) Is China's environmental policymaking influenced by the EU's engagement?

Q1. What are the institutions in EU-China environmental cooperation? And how do they come into existence?

Two levels of institutions exist in EU-China environmental cooperation. At the sectoral level, institutions are constructed around the four topics: environmental policy, environmental technology, climate change, and energy, such as the EU-China Ministerial Environmental Policy Dialogue, the EU-China Ministerial Climate Change Policy Dialogue, and the EU-China Energy Dialogue. At the sub-sectoral level, institutions are established around specific environmental issues, which are displayed in the case study. In addition, the roles of the ASEM and (particularly) the ECAS should also be highlighted as they are the interregional institutions in EU-China relations.

The coming into existence of these institutions takes place basically through three approaches. The first approach is the top-down approach. This approach is mainly observed between different levels of institutions, such as the role of the ECAS in the establishment of the EU-China Ministerial Environmental Policy Dialogue and EU-

China Climate Change Partnership. Also, in EU-China Energy Cooperation, this approach is reflected in the establishment of the EU-China Urbanization Partnership and the EU-China Strategic Energy Consumer Partnership by the EU-China High-level Energy Meeting. The second approach is the down-top approach. The example of this approach can be discovered in the establishment of the EU-China Energy Dialogue, which was first proposed at the 2005 meeting of the EU-China Energy Working Group. The third approach is the integration approach, which means that the EU and China integrate environment into their broader institutional frameworks. This argument mainly applies to the ASEM and the ECAS. As the top level institutions in EU-China relations, these two institutions were never envisaged particularly for environment. However, with the global and domestic rise of environment, the two sides began to integrate environment into these institutions and finally lifted it to a prominent level.

Q2. What are the roles of institutions in EU-China environmental cooperation? And how do they promote EU-China environmental cooperation?

As explained in the theoretical framework, neoliberals contend that institutions can promote cooperation through three ways: 1) increasing the amount of information available to states about each other; 2) lengthening the “shadow of the future;” 3) reducing the relative costs of transactions. In the EU-China environmental cooperation, the role of institutions in providing information is particularly evident. Playing as platforms for the EU-China counterparts to speak to one another, exchanging information and thus building mutual trust is their most evident role. From the ECAS and the sectoral institutions to the sub-sectoral institutions, such a role is recorded. In addition, some of these platforms also operate decision-making function. This function of institutions constitutes two aspects: the initiation of environmental projects and the creation of new institutions. On the first aspect, the two-level institutions have both been promoting the implementation of cooperation projects, such as the establishment of the EC2 at the 11th ECAS, and the implementation of CDM, EEP and CCS projects within the framework of the EU-China Climate Change Partnership. On the second aspect, as discussed earlier, is mainly reflected between different levels of institutions. By using the higher-level institutions, the EU and China policymakers can create new lower-level institutions, while in some cases lower-level institutions can also assist the establishment of higher-level institutions.

Q3. What are the limits of institutions in EU-China environmental cooperation?

As criticized by neorealists, institutions in world politics face some limits, one of which is its marginal role in dealing with conflictual issues among states, including economic issues. This is very much proven in the discussion of environmental technology transfer and EU-China climate change cooperation. Take climate change as an example. Although, climate change is conventionally viewed as an environmental issue, it is now viewed more as a political, economic, and even security issue. Although the European and Chinese leaders have established a partnership on climate change in 2005, this partnership did not help manage their conflicts at Copenhagen in 2009.¹

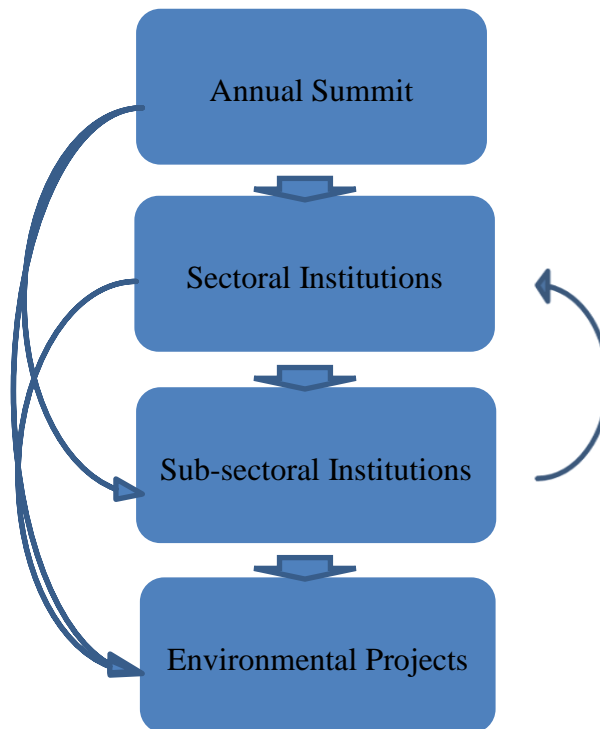


Table 1 The Interaction among Environmental Institutions and Projects

In addition, although it is agreed that environmental institutions may survive better than institutions in the security sphere, my analysis indicates that while they do survive better, these institutions might suffer other limits. These limits lie on three dimensions. The first dimension cares about the structure of institutional framework and the design

¹ A more detailed discussion, please refer Q 4.

of institutions. For example, the detailed analysis of EU-China energy cooperation reveals the fragmentation of the institutional framework in this field, meanwhile, the analysis of the EU-China Ministerial Environmental Policy Dialogue demonstrates that institutions might not be properly designed. The second dimension concerns the practical operation of institutions, where it is not taken seriously. For example, the EU-China Ministerial Environmental Policy Dialogue and the EU-China Urbanization Forum both are actually not put into practice as they are envisaged by the EU and Chinese authorities. Due to the environment is still largely taken as “low-politics,” compared with “high-politics” themes (such as security and arms embargo), the EU and China lack the strong motivation to take environmental institutions seriously. Third, the relations between institutions are not sorted out. As environment is a broad theme which concerns various specific fields, one institution in this field might overlap with another in other fields. This is demonstrated in the EU-China energy cooperation, where the EU-China Urbanization Partnership might overlap the EU-China Low-carbon Cities Partnership.

Q4. Is China’s environmental policymaking influenced by the EU’s engagement?

In the EU-China environmental cooperation, the EU realizes that environmental issues (particular climate change) are cross-border issues, and if China’s environmental problems get worse, particularly if China does not transfer its economic growth pattern and take more efforts to control carbon emissions, both the EU and China will be victims of a deteriorating earth environment. It wants to assist China to turn to a cleaner growth pattern. In addition, it expects China to be more proactive in curbing climate change and be its partner in climate change negotiations. The EU is keen to keep its leadership in global environmental governance, and its leading role cannot possibly be solid without the support from China. Therefore, the EU has always been attempting to influence China’s environmental policymaking in its environmental cooperation with China. And the question is: “To what extent the EU’s engagement is successful?”

On the EU’s influence on China’s environmental policy, some studies have been conducted and the researchers diverge into two camps. Some researchers argue that China’s environmental policy is not influenced by the EU. For example, Holslag Jonathan defines “influence” as “for one country to influence another means that the

first causes the second to do what it would otherwise not have done,” and contends that “the EU has not been driving China’s agenda at all.”² He further explains that even without the EU, China would have understood the significance of investing in renewable energies, and it would have sought to curb carbon emissions. “Despite some friendly public statements directed toward Europe, the Chinese refuse to recognize the EU’s leading role.”³ Stephan Mergenthaler also believes that the EU-China Climate Change Partnership has done little for the EU to influence China’s climate change policy. The EU does not stop China from using its dual status as a developing country and its role as a top contributor to global environmental problems to acquire substantial influence in international environmental negotiations.⁴

In contrast, some studies contend that the EU has generated an influence on China’s environmental policy. For example, Geert de Cock notices that the “European officials are aware that the EU is unable to shift around the list of economic and environmental priorities as decided by the NDRC.”⁵ Therefore, instead of trying to change China policy, “the EU’s strategy vis-à-vis China is to act as ‘a catalyst,’ trying to speed up impending policy changes in China that are in line with the EU’s priorities.”⁶ By taking such strategy, the EU has successfully raised China’s awareness on climate change, and helped China link climate change and (clean) energy challenges.⁷ Astrid Carrapatoso argues that the EU’s climate policies have diffused to China through interregional dialogues, such as the ASEM and ECAS.⁸ Fox John and François Godement also notice that climate change has now been established as a key area in the EU-China relations, and “the EU has helped transform China’s domestic policy in this area.”⁹ A study on EU-China energy cooperation also backs this argument. In the study, the authors

2 Holslag Jonathan, China’s Scepticism of Clean Energy Champion Europe, *The International Spectator*, Vol. 45, No. 1, 2010, p. 127.

3 *Ibid.* p. 128.

4 Stephan Mergenthaler, *Managing Global Challenges: The European Union, China and EU Network Diplomacy*, Springer, 2015, pp. 164–165.

5 Geert de Cock, The European Union as a Bilateral “Norm Leader” on Climate Change vis-à-vis China, *European Foreign Affairs Review*, Vol. 16, Iss. 1, 2011, p. 104.

6 *Ibid.* p. 104.

7 *Ibid.* p. 89–105.

8 Astrid Carrapatoso, Climate policy diffusion: interregional dialogue in China-EU relations, *Global Change, Peace & Security*, Vol. 23, No. 2, 2011, pp. 177–194. In this article, the author defines “diffusion” as “the spreading and melting of ideas through the communicative interaction of two collective entities.”

9 John Fox and François Godement, A Power Audit of EU-China Relations, European Council on Foreign Relations, April 2009, p. 18, See: http://www.ecfr.eu/page/-/ECFR12_-_A_POWER_AUDIT_OF_EU-CHINA_RELATIONS.pdf.

conducted 33 in-depth interviews in Beijing and Brussels, and found out that 70 percent of Chinese actors and 60 percent of EU actors believed that there was an influence by the EU-China energy dialogue on China's energy policy.¹⁰

Building on previous studies, I develop a three-dimension framework to assess the EU's influence on China's environmental policy: technical dimension, state dimension, and global dimension. At the technical dimension, China is keen to learn from the EU to help its environmental governance. Learning environmental governance experience and introducing advanced environmental technologies from the international community have always been main tasks of China's environmental diplomacy. The EU as the leader of global environmental governance is a natural target of China's environmental diplomacy efforts. The above mentioned positive assessments of the EU's influence on China's environmental policy generally fall into this dimension.

The global dimension concerns the EU-China relationship in dealing with global environmental matters, particularly climate change. The studies that argue China's environmental policy is not influenced by the EU generally fit this dimension. On the stage of climate change negotiations, as argued by John Fox and François Godement in 2009, China still remained a "difficult partner"¹¹ for the EU. In climate change negotiations, the EU has been trying to persuade China to behave more responsibly in climate change politics, while China welcomes EU's financial and technological assistance, it does not make a significant change on its climate change position.¹² This assessment was confirmed by the Copenhagen Conference in 2009. At that conference, the EU was attempting to achieve a binding reduction agreement which should involve China—the world's largest carbon emitter, and demonstrate its leadership in climate change. However, China insisted the "common but differentiated responsibilities" and acted along with the US and India to a non-binding accord. China's "surprisingly

10 Michèle Knodt, Nadine Piefer and Suet-Yi Lai, Perception and Challenges of China-EU Energy Cooperation, *Mainz Papers on International and European Politics*, paper No. 10, 2015.

11 John Fox and François Godement, A Power Audit of EU-China Relations, European Council on Foreign Relations, April 2009, See: http://www.ecfr.eu/page/-/ECFR12_-_A_POWER_AUDIT_OF_EU-CHINA_RELATIONS.pdf.

12 Giulia Romano, *The EU-China Partnership on Climate Change: Bilateralism Begetting Multilateralism in Promoting a Climate Change Regime?*, MERCURY E-paper No. 8, December 2010, See: <https://spire.sciencespo.fr/hdl:/2441/lii4hs3p788fogg02efm2qjm9/resources/e-paper-no8-r2010.pdf>. See also: Duncan Freeman and Jonathan Holslag, *Climate for Cooperation: The EU, China and Climate Change*, A report by the Brussels Institute of Contemporary Chinese Studies, September 2009.

difficult and more intransigent”¹³ performance attracted worldwide criticisms led by the EU.

The state dimension of this assessment regards to China’s overall state environmental policy. It implicitly concerns such questions as: “Whether, or to what extent that China’s decision to turn to a low-carbon economy is influenced by the EU?” “Whether, or to what extent that China’s support to clean energy industry is a consequence of the EU’s engagement?” Or, in the language of Jonathan Holslog: “Would China have understood the significance of investing in renewable energies and sought to curb carbon emissions without the EU?” Certainly, a serious answer to this question requires a considerable volume of empirical research, which is beyond the ambition of this thesis. However, a brief overview of history can reveal some clues. China’s environmental policymaking is never a black box. In fact, China’s environmental governance was initiated by its participation in the UNCHE in 1972. This conference led to the recognition of environmental matters by the Chinese government for the first time, and promoted the making of environmental policies and the establishment of environmental agencies in China. In 1992, China participated in the UNCED and introduced some new ideas to its environmental protection. Soon after that conference, China released “China’s Ten Strategic Policies on Environment and Development and National Agenda 21—White Paper on China’s Population, Environment and Development in the 21st Century” and marked the beginning of the sustainable development process in China. After then, environment began to be integrated into China’s national development plans. In China’s ninth five-year plan (1996–2000), sustainable development was introduced for the first time, while environmental protection targets were set in the following 10th five-year plan (2001–2005).

The consequences of these two events indicate that China has always been accessible to outside influence regarding to environment. It is notable that China did not commence to invest dramatically in clean energies and transform its environmental growth pattern until Hu Jintao took power in 2003. At that era, the global leader of environmental governance (including climate change) was arguably the EU. It would not be beyond one’s expectation if the then China’s national environmental policy was influenced by

13 John Drexhage and Deborah Murphy, Copenhagen: A Memorable Time for All the Wrong Reasons?, IISD Commentary, International Institute for Sustainable Development, December 2009, p. 4.

the EU's efforts to lead global environmental governance, and by the EU's model as an economy that was turning green.

Therefore, the EU's influence to China's environmental policymaking differs at the three dimensions of EU-China environmental cooperation. At the technical dimension, the EU's influence has been a success story, while at the global dimension, although the EU has been trying to promote China to take more responsibilities and accept a binding reduction target, China has been largely sticking with its stance and rejects to make dramatic changes. Although more research is required to assess carefully the EU's influence on China's environmental policy at the state dimension, the history records indicate the likelihood.

Today, the EU's engagement with China's environmental governance can be further promoted at these three dimensions. At the technical dimension, the EU might consider providing China with more assistance in governing the environment. Although China has invested considerably in environmental governance in recent years, it is still in urgent need of foreign assistance, particularly environmental technologies and experience. European companies enjoy a share of 40 percent of all patents for renewable technologies,¹⁴ and the EU's eco-industries account for about one third of the global market and are growing annually by around five percent.¹⁵ The EU's assistance is of substantial value for China. At the state dimension, China has realized the significance of environmental matters, and has been continuously investing in such sectors as environmental protection industry, and renewable energies. Therefore, the need for the EU to help China transform its ideas on economic development is minor now. However, the EU at least can still encourage China to take more efforts to turn to a low-carbon economy by serving as a low-carbon economy model. At the global dimension, which is represented by the climate change theme, the EU is now a less important solution compared with China and the US. While China is becoming more proactive in climate change politics, it is more willing to take responsibilities in curbing global warming. To

14 Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee, The Committee of the Regions and the European Investment Bank: A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy, COM(2015) 80 final, 25 February 2015, p. 3, See: <http://eur-lex.europa.eu/legal-content/en/TXT/?uri=COM%3A2015%3A80%3AFIN>.

15 European Environment Agency, Environmental Technology, See: <http://www.eea.europa.eu/themes/technology/intro>.

guarantee the EU's leadership in climate change, the EU is now in unprecedented need of China's collaboration. In addition, considering the obscure prospect of global climate change governance due to the Trump presidency, the EU and China share common interests in promoting the international community to take continuous efforts.

In brief, the main findings of this thesis include: 1) an institutional framework of the EU-China environmental cooperation has been constructed. This framework constitutes sectoral and subsectoral levels and is under the supervision of the ECAS; 2) the institutions in the EU-China environmental cooperation share roles of exchanging information and building mutual trust, initiating environmental projects, and creating new institutions; 3) limits exist in the institutions of the EU-China environmental cooperation, which concern the aspects of the structure of institutional framework and the design of institutions, the practical operation of institutions, and the relations between institutions; 4) although the EU and China have cooperated considerably in the field of environment, the EU's engagement in China's environmental policymaking at the global level is largely a failure story. However, the EU's engagement in China's domestic environmental governance has been demonstrated a success at the technical level and likely a success also at the state level.

2. Future Studies

This thesis analyzes the institutions in EU-China environmental cooperation by applying the conventional neoliberalism wisdom. It answers some questions and contributes to the literature of the study of EU-China relations. However, some relevant questions still remain unanswered, and might serve as the directions for future studies.

1) On the theoretical perspective, some works that are beyond the conventional neoliberalism scope might be learnt. This thesis has demonstrated the fitness of the conventional neoliberalism in the study of environmental politics. However, when going deeper to specific environmental issues, it still seems rough to guide the analysis. For example, as criticized by some scholars, regime theory (including the neoliberal version) faces some constraints when being applied to analyze the global environmental

governance. The first constraint is due to its predominant focus on nation states, which severely limits attention to the role of actors that operate either below or above the level of the state. The second constraint is that the regime approach is unable to give serious recognition to domestic politics. The third constraint is that neither the realist nor the neoliberal institutionalist approach to regime would seem prepared to consider that the involvement of non-nation state actors. The fourth constraint is that the rigid inside/outside divide between what is seen as “domestic” politics and that which is seen as “international” leaves little room for appreciation of the peculiarities of environmental problems like climate change. The fifth constraint is that the regime theory is basically “single-issue focused” and as such does not provide ample opportunity for attention to the interconnectedness of the environment.¹⁶

In addition to the critiques on the application of neoliberalism in environmental politics, some studies on environmental politics have been developed from a theory perspective. For example, Oran Young identifies three themes in his research on the institutional dimensions of global environmental change: the problems of fit, interplay, and scale. He briefly explains that “‘fit’, in this context, is a matter of (in)congruity between properties of the relevant ecosystems and attributes of the institutions created to guide human interactions with these biophysical systems.” And “‘interplay’, has to do with interactions among distinct institutions either at the same level of social organization (horizontal interplay) or across levels of social organization (vertical interplay),” while “scale” “concerns the transferability of findings relating to the institutional dimensions of environmental change from one level of social organization to another.”¹⁷ The above two examples indicate the theoretical prosperity in the study of environmental institutions beyond the conventional neoliberalism, and would require more work along with this direction.

2) The evolution of institutions in EU-China environmental cooperation might be paid more attention. This requires both theoretical and empirical efforts. On the theoretical perspective, for example, further research might focus on the design, change, interaction,

16 Chukwumerije Okereke and Harriet Bulkeley, Conceptualizing climate change governance beyond the international regime: a review of four theoretical approaches, *Tyndall Centre Working Paper*, No. 112, October 2007.

17 Oran Young, Environmental governance: the role of institutions in causing and confronting environmental problems, *International Environmental Agreements*, Vol. 3, Iss. 4, 2003, p. 378; Oran Young, *The institutional dimensions of environmental change: fit interplay and scale*, MIT Press, 2002.

and decay of institutions in EU-China environmental cooperation, where each of them fits a particular theoretical background. On the empirical perspective, more evidence might be collected to answer some questions behind the image. For example, the reasons of the coming into existence and end of some institutions, and the roles of the commercial sectors and nongovernmental organizations in this process, might be good topics for further studies.

3) Attention might be equally paid to the new developments in EU-China environmental cooperation. In this thesis, I have been trying to keep track with the new developments of EU-China environmental cooperation and the roles of institutions in this development. However, as a study on institutions, which are considerably stable and do not evolve easily, it would be beyond its ambition to keep closely with the details of the new developments of the EU-China environmental cooperation. For further studies, one might be interested in discussing, for example, the impact to EU-China environmental cooperation generated by the change on one side, such as Xi Jinping's efforts to govern China's environment, and the "Brexit" in the Europe.

4) The EU and China environmental cooperation might be further examined in a broader context. In this thesis, I discuss the EU-China environmental cooperation at a bilateral level and rule out the outside factors. This is necessary for conducting a research, otherwise the topic would be too broad. However, one should be reminded that in global environmental politics, which is represented by climate change negotiations, the EU and China are always interplaying with other powers, such as the US. Therefore, it would be interesting, for example, examine the role of the US in the history of EU-China climate change cooperation, and the potential impact of the US to the EU-China climate change relationship with President Trump went into the White House.

Annex I. China's Environmental Crisis

With around 9.6 million square kilometers of land, China has one of the most complex geographical conditions in the world, and thus, one of the most flourishing biodiversities. The ancient Chinese people had understood the significance of environmental protection clearly. According to Shapiro, who is a renown observer of Chinese affairs and the author of “Mao’s War Against Nature,” three major schools of thought about the relationship between human and nature could be identified: “a Daoist tradition that tended toward accommodation to nature’s way, a Buddhist tradition of reverence for all living beings, and a Confucian tradition that actively sought to manage, utilize and control nature.”¹ After the establishment of the PRC, particularly the reform and opening up in 1978, China began to devote itself to economic construction. With the growth of population and the utilization of modern technology, China’s power to exploit nature grew rapidly. While the economic benefits were harvested, serious environmental problems emerged.

In October 1949, Mao Zedong declared the establishment of the PRC. In 1956, he analyzed the new situations that China was facing and pointed out the future major works of the CPC, which was the economic construction, and this policy was soon confirmed at the Eighth National Congress of the CPC. Stimulated by the prompt success, Mao and his colleagues soon went radical, and showed an urgent wish in economic construction. In 1958, Mao launched the Anti-rightist Movement (反右倾 Fan Youqing) which led China to the domestic unrest in the next two decades. Political struggle was prioritized among the national issues, while economic construction was left aside and was tagged with political sense. “Class struggle, which created such adversity in human relationships, thus also created severe environmental damage. The state’s battle against individualism, feudalism, capitalism and revisionism was also a battle against nature.”² Took over the traditional Confucian ideas on environment and “motivated by utopianism to transform the face of the earth and build a

1 Judith Shapiro, *Mao’s war against nature: Politics and the environment in revolutionary China*, Cambridge University Press, 2001, p. 7.

2 *Ibid.* p. 3.

socialistparadise,”³ Mao mobilized his people to fight against and conquer nature. He said that: “to struggle against the heavens is endless joy, to struggle against the earth is endless joy, to struggle against people is endless joy (与天斗其乐无穷, 与地斗其乐无穷, 与人斗其乐无穷; Yu Tian Dou Qi Le Wuqiong, Yu Di Dou Qi Le Wuqiong, Yu Ren Dou Qi Le Wuqiong).” Under his rule, China put forward some unrealistic slogans, such as “catch up with Britain and overtake the United States” (赶英超美 Ganying Chaomei), and launched a number of movements including the notorious “Great Leap Forward” (大跃进 Da Yuejin) which “failed to reach its goals, decimated China’s forests and caused widespread starvation.”⁴

It is without doubt that China’s environment was seriously damaged under Mao’s rule. When analyzing the reasons of this environmental disaster, Shapiro recognizes four elements that should be blamed: political repression, utopian urgency, domestic uniformity, and state-ordered relocation.⁵ Vaclav Smil, who is the author of “The Bad Earth-Environmental Degradation in China,” concludes that the “legacy of lawlessness, the absence of personal responsibility in a system of collective leadership, unrealistic economic goals, the desperation of poor peasants”⁶ are the causes of China’s environmental degradation.

Mao’s political rule and his war against nature generated a two-fold impact to China. First, China’s environment is destructed. Second, Mao’s legacy is still producing a substantial impact on China’s political life “through the people’s ‘crisis of belief’ in socialism, their mistrust of Communist Party leadership, and their turn toward materialism, short-term profits, and apparent venality in human relations, all of which encourage rapid and unsustainable exploitation of nature.”⁷ This legacy rose to the surface with the reform and opening up since 1979, and triggered people’s unprecedented impulse to get rid of poverty. To feed the economic growth, natural resources were exploited whilst the wastes were poured to the air, water and land to save costs. In around three decades, China made an economic miracle and jumped to the

3 *Ibid.* p. 8.

4 *Ibid.* p. 2.

5 *Ibid.* p. 4.

6 Vaclav Smil, *The bad earth: Environmental degradation in China*, Zed Press, 1984, pp. 23–24.

7 Judith Shapiro, *Mao’s war against nature: Politics and the environment in revolutionary China*, Cambridge University Press, 2001, p. 17.

second largest economy in the world. However, along with the economic take-off is the severe environmental degradation: air, water and soil are heavily contaminated while deforestation is covering almost one quarter of its total land.

Due to the diversity of environmental issues, the discussion on China's environmental crisis is necessarily selective. Here, I select four indicators: air pollution, water pollution, soil pollution, and deforestation to briefly outline China's environmental crisis for the readers.

1. Air Pollution

Air pollution is the most vital environmental issue for nowadays China. As announced by the Asian Development Bank in 2013, seven Chinese cities were among the world's 10 most polluted cities, and less than one percent of the 500 largest cities in China met the air quality standards recommended by the World Health Organization.⁸ A research by Chinese authorities confirmed this worrying situation. It was reported by MEP that only 16 of its 161 monitored cities reached the ambient air quality standards in 2014.⁹ Among all the air pollutants, PM 2.5 is now the major health hazard to urban Chinese people in particular. By invading human respiratory system with various toxic heavy metals, organic pollutants and microorganisms (such as bacteria and virus), they can affect the normal functioning of the respiratory organs, cause inflammations, lung diseases and even cancer. In 2013, China was attacked by the heaviest smog it ever seen since 1961 with an average 35.9 smoggy days nationwide.¹⁰ What makes the situation worse is that the air issues do not come alone. This is extremely true for the northern part of China, which are still occasionally attacked by sand storms. Although in the last decades, the sand storm problem has been alleviated by large-scale reforestation, it is still a sword hanging over the heads of residents at the northern and northwestern China. In the spring of 2015, the heaviest sand storm ever seen in the last 13 years settled on Beijing. Combined with smog, it dragged the awful air quality of Beijing to grave.

8 Zhang Qingfeng and Robert Crooks, *Toward an environmentally sustainable future: Country environmental analysis of the People's Republic of China*, Asian Development Bank, 2012, pp. xvii.

9 2014 年中国环境状况公报—大气环境 (2014 nian Zhongguo Huanjing Zhuangkuang Gongbao—Daqi Huanjing; 2014 Report on the State of the Environment- Atmosphere), 08 June, 2015, See: http://jcs.mep.gov.cn/hjzl/zkgb/2014zkgb/201506/t20150608_303142.htm.

10 2013 年中国环境状况公报—大气环境 (2013 nian Zhongguo Huanjing Zhuangkuang Gongbao—Daqi Huanjing; 2013 Report on the State of the Environment- Atmosphere), 05 June, 2014, See: http://jcs.mep.gov.cn/hjzl/zkgb/2013zkgb/201406/t20140605_276521.htm.

While the northern China is choking in smog and sand storms, the southern China is suffering acid rain. According to the data of the MEP, 44.3 percent of the 470 Chinese cities were still under the impact of acid rain in 2014, and almost all of them located at the south.¹¹

2. Water Pollution

China is one of the countries with the most abundant water resources in the world. However, considering its 1.4 billion population, it is scarce in per capita terms. In 2007, the per capita availability of water resources of Chinese people was estimated at only 2,156 m³ annually—around one-fourth of the world average. What makes the problem more severe is that China's water resource is unevenly distributed. The water resource per capita enjoyed by the residents in north China was only 757 m³ annually, which was less than one-fourth of their counterparts in south China.¹² It was reported in 2012 that around two-thirds of Chinese cities were short of water and lives of around 300 million Chinese rural residents were affected by water scarcity.¹³

More gravely, this problem is further amplified by water pollution. Like the other countries in the world, China developed a grading system to evaluate the quality of surface water, such as rivers, lakes, and reservoirs. This system consists of five grades from I to V, and the water quality gets worse with the rise of the grade. The water that shares the worst quality is classified as V-. Usually water that meets the grade III is deemed drinkable. According to the 2014 data of the MEP, the quality of 28.8 percent Chinese rivers was under grade IV, with nine percent was classified as V-. A similar system is developed to assess the ground water quality. According to the monitor of Chinese authorities in 2014, 45.4 percent of its ground water was classified as grade IV, while 16.1 percent was classified as grade V.¹⁴ As regulated by Chinese environmental authority, ground water below grade IV is believed undrinkable without proper

11 2014 年中国环境状况公报—大气环境 (2014 nian Zhongguo Huanjing Zhuangkuang Gongbao—Daqi Huanjing; 2014 Report on the State of the Environment- Atmosphere), 08 June, 2015, See: http://jcs.mep.gov.cn/hjzl/zkgb/2014zkgb/201506/t20150608_303142.htm.

12 Jian Xie et al., Addressing China's water scarcity: recommendations for selected water resource management issues, The International Bank for Reconstruction and Development/The World Bank, 2009.

13 Yang Jian, China's river pollution "a threat to people's lives," *People.cn*, 17 February 2012, See: <http://en.people.cn/90882/7732438.html>.

14 2014 年中国环境状况公报—淡水环境 (2014 nian Zhongguo Huanjing Zhuangkuang Gongbao—Danshui Huanjing; 2014 Report on the State of the Environment-Fresh Water), 05 June 2015, See: http://jcs.mep.gov.cn/hjzl/zkgb/2014zkgb/201506/t20150605_303011.htm.

treatment, it means that over 60 percent of China's ground water could be used directly for drinking.

3. Soil Pollution

Although not as attractive as air and water pollution, China's soil pollution problem should never be underestimated. As Li Ganjie (who was the vice minister of the MEP between 2008 and 2016) said that "China's soil protection situation is in a very serious state of grave danger."¹⁵ From 2005 to 2013, the MEP and the Ministry of Land and Resources implemented a survey jointly on China's soil pollution issue. According to the report of the survey which was once a state secret, 16.1 percent of China's soil presented contamination, and 1.1 percent was heavily contaminated.¹⁶ The most astonishing data were linked with the arable land. Although China is one of the biggest countries in territory in the world, due to its complex geographical conditions, its land that is suitable for farming is limited. However, although it is vital to feed the 1.4 billion Chinese people, 19.4 percent of China's farming land had been polluted. The human industrial and agricultural activities were blamed as the major pollution sources.¹⁷

4. Deforestation

Deforestation is another grave issue threatening the survival of Chinese people. Although efforts have been exerted by the Chinese government, China's deforestation still remains grave. As surveyed by the State Forestry Administration, more than 2.6 million square km² or 27.33 percent of China's total territory was corrupted by deforestation in 2009, with around 0.311 million square km² land under the threat of desertification, accounting for 3.24 percent of China's territory.¹⁸ Deforestation is not only occupying China's vital arable land resource, but is also a major cause of sand storms. In the dry days of winter and spring, powered by the heavy north wind, sand storms can sweep the whole north China.

China paid a high price for the grave environmental degradation. It is believed as a

15 Zhang Rui, China's soil pollution in dangerous state, *China.org.cn*, 09 March 2015, See: http://www.china.org.cn/china/NPC_CPPCC_2015/2015-03/09/content_35001657.htm.

16 Xinhua insight: China alerted by serious soil pollution, vows better protection, *Xinhuanet*, 17 April 2014, See: http://news.xinhuanet.com/english/indepth/2014-04/17/c_133270984.htm.

17 *Ibid.*

18 Bulletin on the state of deforestation and desertification of China, *China.com.cn*, January 2011, See: http://www.china.com.cn/zhibo/zhuanti/ch-xinwen/2010-08/31/content_21669628.htm.

major threat to the health of Chinese people. Take air pollution as an example. According to a collaborative study by the World Bank and Chinese government in 2007, 750,000 people die prematurely in China each year, mainly due to air pollution in large cities.¹⁹ A study published in 2013 is more shocking. It points out that the outdoor air pollution should be blamed for 1.2 million premature deaths in China in 2010.²⁰ Another study by Green Peace reveals that the smog alone can possibly cause 8,572 premature deaths in only four Chinese cities (Shanghai, Guangzhou, Xi'an, and Beijing).²¹ The economic price of environmental pollution is difficult to assess, however all the studies try to put a price tag on China's environmental degradation are alarming. In 2006, China released the "Green National Accounting Study Report 2004." Although widely considered as conservative, it reports that in 2004 the economic costs generated by environmental degradation were 511.8 billion RMB, or about 3.05 percent GDP.²² When the last similar study was made known by public in 2013, the figure was raised to around 1.54 trillion RMB, accounting for 3.5 percent GDP of 2010.²³

19 Richard McGregor, 750,000 a year killed by Chinese pollution, *Financial Times*, 02 July, 2007, See: <http://www.ft.com/intl/cms/s/0/8f40e248-28c7-11dc-af78-000b5df10621.html#axzz3VbCj7b3H>.

20 Edward Wong, Air Pollution Linked to 1.2 Million Premature Deaths in China, *The New York Times*, 01 April, 2013, See: http://www.nytimes.com/2013/04/02/world/asia/air-pollution-linked-to-1-2-million-deaths-in-china.html?_r=0.

21 Dangerous Breathing—PM2.5: Measuring the human health and economic impacts on China's largest cities, *Greenpeace*, 18 December 2012, See: <http://www.greenpeace.org/eastasia/Global/eastasia/publications/reports/climate-energy/2012/Briefing%20Dangerous%20Breathing%20-%20Greenpeace.pdf>.

22 Pollution costs China 511.8 billion yuan in 2004, *China Daily*, 07 September 2006, See: http://www.chinadaily.com.cn/china/2006-09/07/content_683896.htm.

23 Edward Wong, Cost of environmental damage in China growing rapidly amid industrialization, *The New York Times*, 29 March 2013, See: <http://www.nytimes.com/2013/03/30/world/asia/cost-of-environmental-degradation-in-china-is-growing.html>.

Annex II. The EU and China's Energy Policies

1. The EU's Energy Policy

Although the EU commenced its unification from the field of energy in 1951, there was no a “European energy policy” until around 2006/2007. Therefore, “the EU’s energy policy” is still a newborn and in this section, recognizing the previous studies, I divide the evolution of the EU’s energy policy into two phases: 1951–2005, and 2006–present.

1.1 Phase I: 1951–2005

The signing of the Treaty of Paris in 1951 declared the establishment of the European Coal and Steel Community. The establishment of this community created a common market for coal and steel among Belgium, France, West Germany, Italy, the Netherlands, and Luxembourg, and marked the first step taken to a European Community. In 1957, with the signing of the Euratom Treaty, nuclear energy—which was the then emerging energy resource showing a promising civil and military potential—was involved in the international co-governance. In 1962, the community’s first series of studies on energy policy was initiated within an Inter Executive Working Party on Energy, which resulted in the production of a memorandum.¹ Afterwards, the commission released the Protocol of Agreement on Energy Matters Concluded between the Governments of the Member States of the European Communities in April 1964 and the Council Decision on the Community’s Policy for Oil and Natural Gas in July 1967.

Based on the progresses made in those years, the commission published a memorandum: First Guidelines for a Community Energy Policy in December 1968,. In this document, which was formulated to construct a framework for the community to take actions on energy, the need, aims, and instruments of a community energy policy were elaborated. In addition, two annexes entitled The Present Situation of the Community’s Energy Market, and Fundamental Problems of a Community Energy Policy were attached, to “establish agreement on the main data of the Community energy economy” and

¹ Terence Daintith, *Leigh Hancher, Energy Strategy in Europe: The Legal Framework*, De Gruyter, 1986, p. 20.

“comprise a synoptic survey of the problems of energy policy arising generally and in the various fields.”² Meanwhile, the Council released the Council Directive 68/414/EEC and commenced to take actions at the European level. According to the Directive, all EU members should establish and maintain minimum stocks of the most important petroleum products to at least 65 days’ average daily internal consumption. It also requires the member states to take the obligation to submit to the Commission a summary about the stocks existing at the end of each quarter. The Commission, meanwhile, has the duty to arrange a consultation between the member states when difficulties arise with regard to Community oil supplies.³ In the 1970s and 1980s, the Community had been keeping moving forward to an integrated energy policy and released numerous policy papers, directives, and plans.⁴ However, these efforts did not result in an independent chapter of energy in the major treaties concerning the European integration in this period, and the rights of energy policymaking were still in the hands of EU member states.

1.2 Phase II: 2006–Present

The 2005–2006 Russia-Ukraine natural gas crisis “taught the EU that the traditional economic approach had reached its limits and that new policies in the energy sector were urgently needed.”⁵ In March 2006, the EU issued a green paper named “A European Strategy for Sustainable, Competitive and Secure Energy,” which was viewed by the then Commission President José Manuel Barroso as “a step change for the European Union. Energy policy was a core area at the start of the European project. We must now return it to center stage.”⁶ In this green paper, the Commission proposes a common European energy policy and identifies three main objectives of the EU’s energy policy, which are sustainability, security of supply, and competitiveness. It also

2 EC, First Guidelines for a Community Energy Policy: Memorandum Presented by the Commission to the Council. COM (68) 1040 Final, Brussels: European Commission, 18 December, 1968, p. 5.

3 Council Directive of 20 December 1968-imposing an obligation on Member States of the EEC to maintain minimum stocks of crude oil and/or petroleum products (68/414/EEC), *Official Journal of the European Communities*, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31968L0414>, pp. 586–588.

4 For a compile of these documents, please refer to: <http://aei.pitt.edu/view/eusubjects/H016004.html>.

5 Raphaël Metais, Ensuring Energy Security in Europe: The EU between a Market-based and a Geopolitical Approach, EU Diplomacy Paper, 03/2013, p. 4, See: https://www.coleurope.eu/sites/default/files/uploads/page/edp_3_2013_metais.pdf.

6 Commission proposes an integrated energy and climate change package to cut emissions for the 21st Century, Brussels, 10 January, 2007, See: http://europa.eu/rapid/press-release_IP-07-29_en.htm?locale=en.

pays extra attention to the emergence of an external EU energy policy to enable the EU to speak with the same voice.⁷ It addresses that “a coherent external policy is essential to deliver sustainable, competitive and secure energy”⁸ and thus urges the establishment of a pan-European Energy Community.

Building on this green paper, the EU members convened a meeting on energy in March 2007. As a consequence of this meeting, the first EU energy action plan named An Energy Policy for Europe was generated. In this action plan, the EU singles out three targets for a European energy policy: combating climate change, limiting the EU's external vulnerability to imported hydrocarbons, and promoting growth and jobs. Thereby, providing secure and affordable energy to consumers, and the reduction of GHGs are at the core of a new European energy policy.⁹ Two months later, the GHGs reduction targets were embodied by an action plan on energy policy for the period 2007–2009. In this action plan, five priorities are recognized: internal market for gas and electricity, security of supply, international energy policy, energy efficiency and renewable energies and, energy technologies. Also, it sets “20–20–20 targets” for the EU's efforts of emission reduction, energy efficiency and renewable energies by 2020.¹⁰ In October, the Commission submitted the External Energy Relations-from Principles to Action to the Council and explained its major ways to achieve its external energy policy targets, and elaborated its energy relations with some major energy producers and consumers. In 2008, the EU formulated the Energy Security and Solidarity Action Plan and renewed its energy targets. According to this action plan, the EU will reduce energy consumption by almost 15 percent and energy imports by 26 percent by 2020, and by 2050 carbon-producing energies will be completely replaced by renewable energies in the EU.¹¹

7 EC, Green Paper-A European Strategy for Sustainable, Competitive and Secure Energy, COM (2006)105 final, Brussels, 8 March 2006, See: http://europa.eu/documents/comm/green_papers/pdf/com2006_105_en.pdf.

8 *Ibid.* p. 14.

9 Communication from the Commission to the European Council and the European Parliament of 10 January 2007, *An energy policy for Europe*, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3A127067>.

10 Brussels European Council, Presidency Conclusions–Brussels, 8/9 March 2007, See: http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/93135.pdf.

11 Communication from the Commission to the European parliament, the Council, the European Economic and Social Committee and the Committee of the Regions-Second Strategic Energy Review: an EU energy security and solidarity action plan, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3Aen0003>, last updated: 04/03/2009.

While the EU's energy policy was coming into being, a number of energy agencies were also established. The Energy Community was founded in 2005, which involves the EU and a few countries from the South East Europe and Black Sea region. It aims to "extend the EU internal energy market to South East Europe and beyond on the basis of a legally binding framework."¹² In 2010, the DG ENER was organized to develop and implement the EU's energy policy.¹³ The most prominent progress was recorded in 2009 when the Lisbon Treaty went into force. The Lisbon Treaty which includes a section on energy sets a number of targets on energy for the EU: 1) ensure the functioning of the energy market; 2) ensure security of energy supply in the Union; 3) promote energy efficiency and energy saving and the development of new and renewable forms of energy; 4) promote the interconnection of energy networks. However, the greatest significance of this treaty lies on its revision to the decision-making mechanism. The Council had to decide all energy legislations unanimously before 2009, and this is reversed by the Lisbon Treaty which makes energy an issue that can be decided with qualified majority.

After an intensive legislative and institutional development since 2007, the Union turned its attention back to the mid and long-term energy targets setting and the way to reach them. In 2010 and 2011, the EU issued the "Energy 2020: A Strategy for Competitive, Sustainable and Secure Energy" and "Energy Roadmap 2050." In the former, the EU identifies five priorities for its energy strategy to 2020: 1) achieving an energy efficient Europe; 2) building a truly pan-European integrated energy market; 3) empowering consumers and achieving the highest level of safety and security; 4) extending Europe's leadership in energy technology and innovation; 5) strengthening the external dimension of the EU energy market.¹⁴ The Energy Roadmap 2050 "explores the transition of the energy system in ways that would be compatible with this greenhouse gas reductions target (by 80–95 percent when compared to 1990 levels by 2050) while also increasing competitiveness and security of supply."¹⁵ It points out that

12 Energy Community—Who Are We, See: https://www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY/Who_are_we.

13 The Directorate-General for Energy—About Us, See: <https://ec.europa.eu/energy/en/about-us>.

14 Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions, Energy 2020—A strategy for competitive, sustainable and secure energy, Brussels, 10/11/2010, See: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52010DC0639>.

15 EC, 2050 Energy Strategy, See: <https://ec.europa.eu/energy/en/topics/energy-strategy/2050-energy->

energy efficiency, renewable energy, nuclear energy and CCS are the four main routes to this target.¹⁶ A recent development on the EU energy policy was recorded in 2015 when a framework for energy union was outlined. With the guide of the three long-established targets of the EU's energy policy (security of supply, sustainability, and competitiveness), the framework sets five mutually supportive dimensions: energy security, solidarity and trust; the internal energy market; energy efficiency as a contribution to the moderation of energy demand; de-carbonization of the economy; and research, innovation and competitiveness.¹⁷

After an evolution of over half a century, the EU's energy policy finally came into existence around 2006/2007. Notably, the formation of the EU's energy policy was largely stimulated by the external factors—the Russia-Ukraine gas crisis and climate change, which cannot be dealt with by a single state. In the few years after 2006, the EU soon constructed its institutional framework to implement energy policy, revised its decision-making mechanism and set a number of energy targets aim at 2020, 2030, and 2050, and the routes to reach them.¹⁸ The EU's energy efforts are built on internal efforts on the intensification of energy efficiency and the wide deployment of renewable energy. In addition, it also implements internal and external policies to increase the diversification of supplies, achieve the internal energy market and solidarity measures between member states in case of supply disruptions.¹⁹

Today, the EU is still facing three-fold challenges in ensuring its energy security: decrease in EU primary energy production, dynamic changes in the energy mix and

strategy.

16 *Ibid*, See also: EC, *Energy Roadmap 2050*, Luxembourg: Publications Office of the European Union, 2012, See: https://ec.europa.eu/energy/sites/ener/files/documents/2012_energy_roadmap_2050_en_0.pdf.

17 Energy Union Factsheet, Brussels, 25 February 2015, See: http://europa.eu/rapid/press-release_MEMO-15-4485_en.htm; Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee, The Committee of the Regions and the European Investment Bank, A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy, Brussels, 25.2.2015, COM(2015) 80 final, See: http://eur-lex.europa.eu/resource.html?uri=cellar:1bd46c90-bdd4-11e4-bbe1-01aa75ed71a1.0001.03/DOC_1&format=PDF.

18 Targets for 2030: 40 percent reduction in greenhouse gas emissions; at least 27 percent EU energy from renewable; increase energy efficiency by 27–30 percent; 15 percent electricity interconnection (i.e. 15 percent of electricity generated in the EU can be transported to other EU countries); Target for 2050: an 80–95 percent cut in greenhouse gases compared with 1990 levels. See: http://europa.eu/pol/ener/index_en.htm.

19 Marie-Claire Aoun, *European Energy Security Challenges and Global Energy Trends: Old Wine in New Bottles?*, Institut français des relations internationales, January 2015, See: <http://www.iaf.it/sites/default/files/iafwp1503.pdf>.

uncertain demand, and growing import dependency.²⁰ To address these challenges, despite internal efforts, the EU also “pursues enhanced energy cooperation with energy partners abroad in order to address effectively shared global energy challenges and to ensure the competence of its own energy policies, which often hinge on the energy policies of other countries.”²¹ On its external energy relations, the EU develops a four-level relationship structure. Taking the Energy Community (including Western Balkans, Ukraine, Moldova) as the core, it aims to “extend the EU’s internal energy market to South Eastern Europe and the Black Sea region”²² (the first level). Besides, the EU also prioritizes its main energy supply “corridors,” including the southern energy corridor to the Caspian Sea. These efforts and its further attention to the energy supply from the mid-Asian states constitute the second level of the EU’s external energy relations. The third level of the EU’s external energy relations involves a number of major world energy producers and consumers, such as the US and China.²³ Beyond these three levels, the EU also supports a number of global initiatives which aim at increasing energy efficiency, climate protection, and the reduction of emissions, and nuclear security, such as the Energy Charter, Paris Agreement, and the International Energy Forum.²⁴

20 Zha Daojiong, Energy Security in China-EU Relations: Framing Further Efforts of Collaboration, in Jakub Godzimirski (ed.), *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses*, Palgrave Macmillan, 2016, pp. 113–133.

21 Maria Kottari and Virginia Marantidou, The Sino-European Nexus in Global Energy Governance, *EU-China Observer*, Issue #3.16, 2016, p. 8.

22 EC, Energy Community, See: <https://ec.europa.eu/energy/en/topics/international-cooperation/energy-community>.

23 Cao Hui, 欧盟对外能源政策:关系结构与发展工具 (The EU’s Foreign Energy Policy: Relationship Structure and Development Tools; Oumeng Duiwai Nengyuan Zhengce: Guanxi Jiegou yu Fazhan Gongju), *欧洲研究 (Ouzhou Yanjiu; Chinese Journal of European Studies)*, Iss. 2, 2014, pp. 65–81; Maria Kottari and Virginia Marantidou, The Sino-European Nexus in Global Energy Governance, *EU-China Observer*, Issue #3.16, 2016, pp. 8–18; Zha Daojiong, Energy Security in China-EU Relations: Framing Further Efforts of Collaboration, in Jakub Godzimirski (ed.), *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses*, Palgrave Macmillan, 2016, pp. 113–133.

24 Zha Daojiong, Energy Security in China-EU Relations: Framing Further Efforts of Collaboration, in Jakub Godzimirski (ed.), *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses*, Palgrave Macmillan, 2016, pp. 113–133.

2. China's Energy Policy

With the increase of China's energy consumption and thus the rise of its role in global energy politics, China's energy policy has attracted considerable attention from the academia. For example, in a study by Wang Yanyan (et al.) from Tsinghua University, the authors divide the evolution of China's energy policy into three phases: 1949–1980 (which is featured with self-sufficiency), 1981–2005 (when China was trying to diversify its energy supply), and 2006–present (2012) (when China was attempting to conserve its energy and enhance its energy efficiency).²⁵ Another study takes the implementation of the reform and opening up policy and the 10th FYP (2001–2005) as the two milestones of China's energy policy. It argues that the evolution of China's energy policy should be divided into three phases: 1949–1978 (reform and opening up), 1979–2000 (before the 10th FYP), and 2001–present (2008).²⁶ In an article by Yang Zongwei, the evolution of China's energy policy experienced three phases: 1949–1992 (the energy self-sufficiency period), 1993–2002 (the energy-supply oriented period) and 2003–present (2008) (with a feature of increasing supply and promoting conservation).²⁷ In this section, I will join Yang and discuss the evolution of China's energy policy based on a division of three phases. In the first phase, which ranges from 1949 to 1992, China had been trying to guarantee the self-sufficiency of its energy supply. In the second phase, which covers the period from 1993–2002, China had been turning its eyes to the world energy

25 Wang Yanxing, Wang Haibo and Fan Liuyan, 中国能源政策的演变及趋势 (Zhongguo Nengyuan Zhengce de Yanbian ji Qushi; The Evolution and Tendency of China's Energy Policy), *理论学刊* (*Lilun Xuekan; Theory Journal*), Vol. 223, No. 9, 2012, pp. 70–73.

26 Zhao Fang, 中国能源政策：演进、评析与选择 (Zhongguo Nengyuan Zhengce: Yanjin, Pingxi yu Xuanze; China's Energy Policy: Evolution, Analysis and Option), *现代经济探讨* (*Xiandai Jingji Tantaoy; Modern Economic Research*), Iss. 12, 2008, pp. 29–32.

27 Yang Zewei, 中国能源安全问题：挑战与应对 (Zhongguo Nengyuan Anquan Wenti: Tiaozhan yu Yingdui; China's Energy Security Issue: Challenges and Countermeasures) *世界经济与政治* (*Shijie Jingji yu Zhengzhi; World Economics and Politics*), Iss. 8, 2008, pp. 52–60. There are studies argue that China's energy security policy has evolved through four major stages. The first stage (1949–1993) can be called “the self-sufficiency and self-reliance period.” Meanwhile, during the second stage (1993–2005), the main slogan was “go abroad.” China's oil self-sufficiency ended in 1993 and it started to import oil from abroad. The third stage, from 2006 to present, can be called the “outward investment” period. The fourth stage of China's energy security policy began with the global financial crisis in 2008, which gave China an opportunity to utilize its large foreign currency reserve and further expand its investments in the global market. See: Zhang Jian, *China's Energy Security: Prospects, Challenges, and Opportunities*, The Brookings Institution Center for Northeast Asian Policy Studies, July 2011, See: https://www.brookings.edu/wp-content/uploads/2016/06/07_china_energy_zhang_paper.pdf.

resource and trying to guarantee its energy supply with the supply of the world energy market. In the third phase, which commences from 2003, China's main attention is paid to energy efficiency and the growth of clean energy.

2.1 Phase I: 1949–1992

In decades after the establishment of the PRC, China had been a country with a comparatively small economic scale and thus minor energy consumption. Largely due to the tense relations with the super powers during the Cold War, China took self-sufficiency (and thus its energy and national security) and its main energy policy target. China's efforts to satisfy its energy need were reflected by its oil production. In the few decades after 1949, China discovered and drilled a series of giant oil fields, including the Daqing Oil Field and Shengli Oil Field, and thus guaranteed its oil supply. From 1973, China began to export oil and the export reached the top in 1985 when China exported 30.03 million tones oil.²⁸

After 1979, China began to adjust its energy policy and pay more attention to energy conservation and efficiency, and to seek the possibility of international cooperation on oil supply. During the sixth FYP, which monitored China's economic construction from 1981 to 1985, energy was first introduced as an issue.²⁹ In 1982, the Chinese State Council promulgated Regulations of the People's Republic of China Concerning the Exploitation of Offshore Petroleum Resources in Cooperation with Overseas Partners (Regulations). According to this document, the then Ministry of Oil Industry was assigned with the responsibility of governing the international cooperation on exploiting offshore oil resources and the China National Offshore Oil Corporation (CNOOC) was established and granted with the exclusive rights of taking charge of business with overseas partners on conducting oil exploration, development, production, and selling.³⁰

28 中国统计年鉴 1986 (*Zhongguo Tongji Ninajian 1986; China Statistics Yearbook 1986*), 中国统计出版社 (Zhongguo Tongji Chubanshe; China Statistics Press), p. 570.

29 Zha Daojiong, Energy Security in China-EU Relations: Framing Further Efforts of Collaboration, in Jakub Godzimirski (ed.), *EU Leadership in Energy and Environmental Governance: Global and Local Challenges and Responses*, Palgrave Macmillan, 2016, pp. 113–133.

30 Regulations of the People's Republic of China on the Exploitation of Offshore Petroleum Resources in Cooperation with Foreign Enterprises, See: <http://english.mofcom.gov.cn/aarticle/lawsdata/chineselaw/200211/20021100050358.html>; China National Offshore Oil Corporation, Our History, See: <http://www.cnooc.com.cn/col/col6171/index.html>. The regulation was renewed four times in 2001, 2011, 2011, and 2013.

2.2 Phase II: 1993–2002

In 1993, China imported 9.91 million tones crude oil and oil products in 1993, and became a net oil importer.³¹ This indicated that China could not satisfy its oil demand by itself anymore. Actually, in the 1990s, China's oil production grew by 1.6 percent annually, while simultaneously its demand grew by 6.7 percent.³² To meet China's energy target which was "to secure the long-term and stable supply of oil,"³³ it began to invest in the international oil fields. In March 1993, China's nation-owned China National Petroleum Corporation (CNPC) purchased 95.67 percent interest of Banyan Block, Thailand. This is the first international investment of Chinese oil companies. Three months later, the CNPC acquired an operating interest in Canada and produced China's first barrel of oversea oil.³⁴ Since then, China's international investment in oil fields accelerated. Take the CNPC as an example. After Thailand and Canada, it entered the market of Peru in 1994 and Sudan in 1996. In a few years, CNPC soon expanded its business also to countries such as Kazakhstan, Iraq, Venezuela, Myanmar, and Azerbaijan.³⁵

While China was investing its capital in the international oil market, it was also taking efforts to conserve energy and enhance its energy efficiency. In 1996, China adopted the Electric Power Law, in which "the generation of electricity through the use of renewable and clean energy resources"³⁶ was explicitly supported. After that, China issued such laws as the Law on the Coal Industry and the Water Law. In March 1999, the then Chinese President Jiang Zemin delivered a speech and for the first time, China

31 Pan Guang, 改革开放 30 年来的中国能源外交 (Gaige Kaifang 30nian lai de Zhongguo Nengyuan Waijiao; China's Thirty-year Energy Diplomacy since Reform and Opening Up), *国际问题研究 (Guoji Wenti Yanjiu; International Studies)*, Iss. 6, 2008, pp. 29–34.

32 Felix Chang, Chinese energy and Asian security, *Orbis*, Vol. 45, No. 2, Spring 2001, p. 213.

33 *Ibid.* p. 233.

34 Zhang Yiming, 中海油收购尼克森, 中国三大石油公司瞄上加拿大 (Zhonghaiyou Shougou Nexen, Zhongguo Sanda Shiyong Gongsi Miaoshang Jianada; CNOOC Acquires Nexen, Three Chinese Petroleum Corporation Aim at Canada), *Xinhuanet*, 30/07/2012, See: http://news.xinhuanet.com/energy/2012-07/30/c_123491624_2.htm. It was reported that in 1992, China National Petroleum Corporation invested USD 6.5 million in Canada's oil sands development project at the Underground Test Facility operated by Alberta Oil Sands Technology and Research Authority, See: China Joins Alberta Oil Sands Research, *Oil and Gas Journal*, 15/06/1992, <http://www.ogj.com/articles/print/volume-90/issue-24/in-this-issue/drilling/china-joins-alberta-oilsands-research.html>.

35 CNPC Worldwide, See: <http://www.cnpc.com.cn/en/cnpcworldwide/cnpcworldwide.shtml>.

36 The full text of Electric Power Law of the People's Republic of China, See: http://www.npc.gov.cn/englishnpc/Law/2007-12/12/content_1383731.htm.

took the protection of natural resources as one of the fundamental state policies.³⁷ China's energy intensity also kept declining during this period. By 2000, Chinese economic activity required two thirds less energy per unit of output than that of 1978. This is unprecedented for a large developing country, and resulted in that China actually shared 10 percent—rather than 25 percent (in the scenario without efforts to enhance energy efficiency)—of global energy demand in 2001.³⁸

2.3 Phase III: 2003–Present

With the elaboration of Scientific Development Outlook by Hu Jintao, China began to launch its march of transforming economic growth pattern to a low-carbon economy, which also affected its energy policymaking. To turn China to a low-carbon economy, the Chinese government has been taking efforts on four aspects. First, enhance energy efficiency. “Energy efficiency and conservation are officially China’s top energy priority. These are considered the ‘low-hanging fruit’ in the quest to reduce energy use and cut demand.”³⁹ In the decades since 1978, the energy intensity has been continuing declining, despite a slight rebound between 2003 and 2005 (Figure 2). In 2014, China experienced the most dramatic decline of its energy intensity (4.5 percent) since 2008.⁴⁰ As early as the 10th FYP, China planned to decrease its energy consumption per capita by 15–17 percent, which could finally lead to an annual rise of energy consumption of 3.26 percent and a total energy consumption of around 1530 MTCE at the end of 2015. However, contrary to the expectation, the increase of energy consumption during the 10th FYP reached to around 10 percent annually and led to Chinese economy more energy-consuming.⁴¹ To reverse this tendency, China set a 20 percent reduction target

37 Liu Zhenying, Chen Yan and Yang Zhenwu, 中央人口资源环境工作座谈会举行 (Zhongyang Renkou Ziyuan Huanjing Gongzuo Zuotanhui Juxing; The Central Government held Symposium on Population, Resources and Environment), *人民日报* (*Renmin Ribao*; *People's Daily*), 03/14/1999, See: <http://www.people.com.cn/item/ldhd/Jiangzm/1999/huiyi/hy0033.html>.

38 Daniel Rosen and Trevor Houser, *China Energy: A Guide for the Perplexed*, Center for Strategic and International Studies and the Peterson Institute for International Economics, May 2007, See: <https://piie.com/publications/papers/rosen0507.pdf>.

39 Richard Campbell, *China and the United States: A Comparison of Green Energy Programs and Policies*, Congressional Research Service Report for Congress, 14 June 2010, p. 18, See: <http://fas.org/sgp/crs/row/R41287.pdf>.

40 BP Statistical Review 2015-China's energy market in 2014, See: <http://www.bp.com/content/dam/bp/pdf/energy-economics/statistical-review-2015/bp-statistical-review-of-world-energy-2015-china-insights.pdf>.

41 “十五”两大指标“落空” 考验政府“执行力” (“Shiwu” Liangda Zhibiao “Luokong,” Kaoyan Zhengfu “Zhixingli,” Two Targets are not Accomplished during the Tenth FYP, Testing the Government's Power on Implementation), *People.cn*, 10/03/2006, See: <http://finance.people.com.cn/GB/1037/4186147.html>.

for its 11th FYP and barely achieved with a reduction of 19.1 percent recorded. For the 12th FYP, China set a 17 percent reduction target, and a further 18 percent target for 13th FYP compared with that of 2015. Notably, to promote energy conservation, in 2007, China passed the Energy Conservation Law, and confirmed the “energy conservation” as a fundamental state policy by law.⁴²

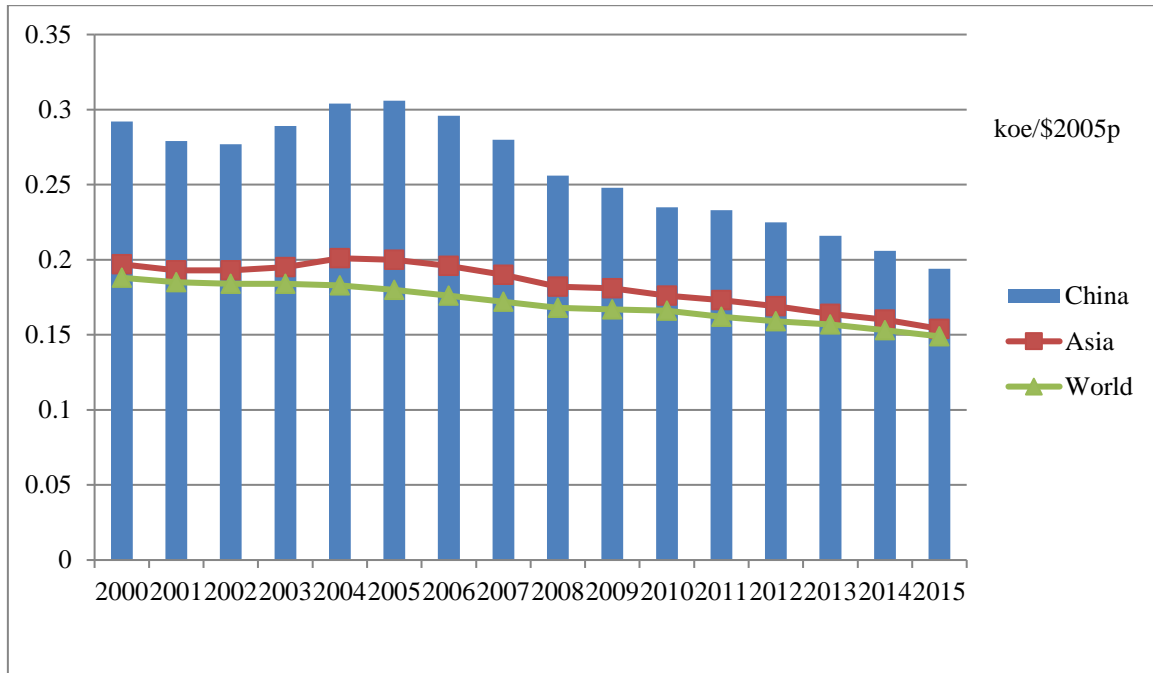


Figure 2 China's Energy Intensity (2000–2015)

Source: Enerdata, Global Energy Statistical Yearbook 2016

Second, decrease the reliance on coal. China's economy is particularly reliant on coal, which is widely regarded as the dirtiest energy. Although in the last decades China has been trying to decrease its dependence on coal, it still occupied as much as 66 percent of its energy consumption in 2014 (Figure 3). Also, over 70 percent of Chinese electricity is generated by coal. It is estimated that China's dependence on coal will not decline to around 46 percent until 2035.⁴³ Generally, although still occupying the lion share in

42 For a collection of laws on energy, please refer to: 能源法律汇编 (Nengyuan Falv Huibian; Collection of Laws on Energy), See: <http://www.nea.gov.cn/nyflfg/>.

43 BP Energy Outlook 2035, Country and regional insights—China, See: <http://www.bp.com/en/global/corporate/energy-economics/energy-outlook/country-and-regional-insights/china-insights.html>.

China's energy mix, coal has been less important than it was. After reaching the peak in 2005, the occupation of coal in China's energy mix has been continuously decreasing. As one of the biggest consumers of coal, power plants have been paid particular attention by Chinese authorities. Following the principle of "Shangda Yaxiao" (上大压小 promote big, squash small), China has been taking efforts to eliminate the backward coal-fired power capacity. During the 11th FYP, China phased out small thermal power generating units with a total generating capacity of 76.82 million KW.⁴⁴

Third, nurture the development of clean energy. While coal is the main power of Chinese economy, clean energy (including nuclear energy) is still taking a comparatively small share. In 2014, non-fossil energy occupied only 11.2 percent of China's primary energy consumption.⁴⁵ The application of clean energy enjoys a great potential in China. According to the estimation of Tao Wang and Jim Watson, "renewable energy could contribute more than 40 percent of China's total energy demand in 2050, and more than 60 percent of power generation."⁴⁶ Chinese leaders take the development of clean energy as an opportunity to make China's economic development more sustainable and more competitive.⁴⁷ To boost the growth of the clean energy industry, China issued the Renewable Energy Law in 2005. It aims at "promoting the development and utilization of renewable energy, increasing the supply of energy, improving the structure of energy, safeguarding the safety of energy, protecting environment and realizing a sustainable economic and social development."⁴⁸ This law took into effect in 2006, and "set a solid foundation for achieving the ambitious goals of increasing the share of non-fossil fuel generation (including both

44 China's Policies and Actions for Addressing Climate Change, Information Office of the State Council The People's Republic of China, November 2011, Beijing, See: <http://www.scio.gov.cn/zfbps/ndhf/2011/Document/1052718/1052718.htm>.

45 Department of Climate Change, National Development and Reform Commission of China, Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions, 30/06/2015, See: <http://www4.unfccc.int/submissions/INDC/Published%20Documents/China/1/China's%20INDC%20-%20on%2030%20June%202015.pdf>; National Bureau of Statistics of China (compiled), China Statistical Yearbook 2015, See: <http://www.stats.gov.cn/tjsj/ndsj/2015/indexch.htm>.

46 Tao Wang and Jim Watson, China's Energy Transition: Pathways for Low Carbon Development, Brighton: University of Sussex, 2009, p. 4.

47 Luke Schoen, Why is China Taking Action on Clean Energy and Climate Change? *China FAQs Issue Brief*, May 2013, See: http://www.chinafaqs.org/files/chinainfo/ChinaFAQs_IssueBrief_WhyAction_0.pdf.

48 For a full text of Renewable Energy Law of the People's Republic of China, please refer to: <http://english.mofcom.gov.cn/article/policyrelease/Businessregulations/201312/20131200432160.shtml>.

renewable and nuclear energy) to 15 percent of primary energy supply by 2020.”⁴⁹ Thanks to the promotion of the government, China's renewable energy industry has jumped to be one of the world's leaders.

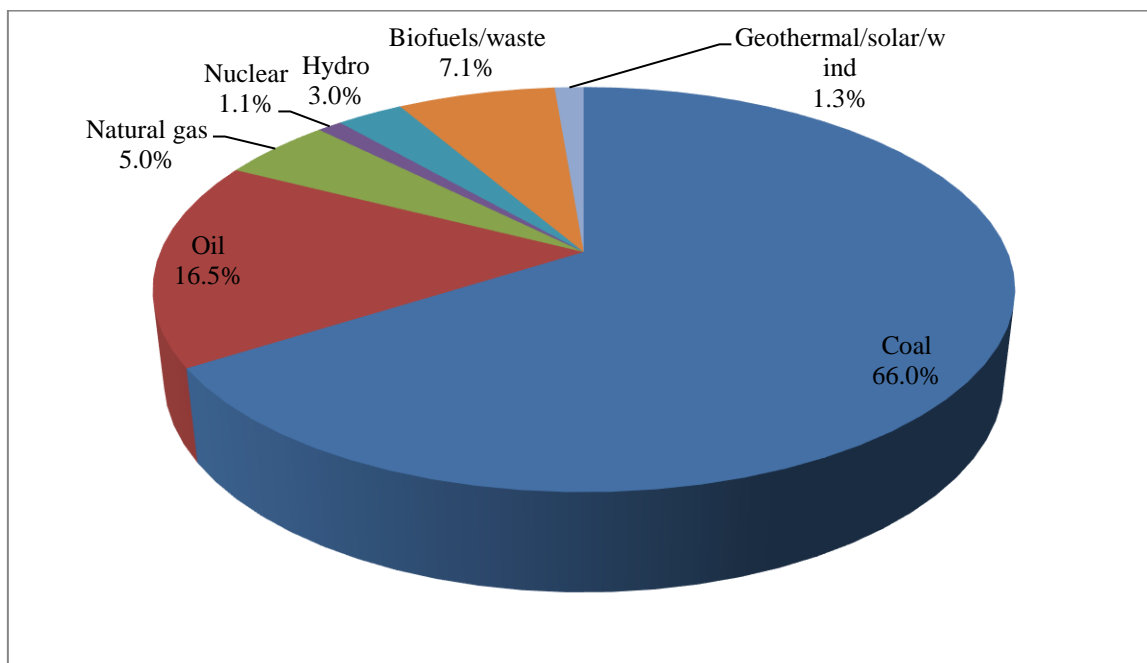


Figure 3 China: Share of Total Primary Energy Supply in 2014

Source: International Energy Agency, Statistics on the web: <http://www.iea.org/statistics/>

China has set ambitious targets to encourage the development of its renewable energy sector and accelerate its steps to adjust energy mix (Figure 4). In November 2014, the State Council released the Strategic Action Plan for Energy Development (2014–2020) to guide the efforts of adjusting the Chinese energy mix by 2020. In this document, China announces that it aims to reduce the percentage of coal in its total energy consumption to 62 percent, and increase the percentage of natural gas and non-fossil energy to respective 10 percent and 15 percent by 2020.⁵⁰ In the “U.S.-China Joint

49 Gabriela Elizondo Azuela et al., Performance of Renewable Energy Auctions Experience in Brazil, China and India, World Bank Group-Energy and Extractives Global Practice Group, October 2014, p. 22, See: <http://documents.worldbank.org/curated/en/842071468020372456/pdf/WPS7062.pdf>.

50 国务院办公厅关于印发能源发展战略行动计划（2014–2020年）的通知 [Guowuyuan Bangongting Gunayu Yinfa Nengyuan Fazhan Zhanlue Xingdong Jihua (2014–2020) de Tongzhi; The Notice of the General Office of the State Council on Publishing the Action Plan of the Energy Development Strategy (2014–2020)], 19/11/2014, See: <http://www.gov.cn/zhengce/content/2014->

Presidential Statement on Climate Change” released in the same month, China further promises that it plans to increase the occupation of non-fossil fuel in its energy consumption to 20 percent by 2030.⁵¹

Fourth, utilize the international energy resources. The efforts to optimize China’s energy structure (which particularly emphasize nurturing the development of renewable energy) cost time. Therefore, China will have to rely on fossil fuel in the near future, and thus the foreign energy resources are still critical to guarantee its energy supply. Take the expansion of CNPC again as an example. After taking the first step to the international oil market in 1993, CNPC began to do business with the world’s biggest energy producers, such as Russia in 2003 and Iran in 2004. Today, the CNPC owns oil and gas operations in 37 countries around the world. In 2014, its overseas operating production amounted to 127 million tonnes of oil equivalent, of which CNPC’s share was 65.2 million tons.⁵²

In conclusion, China’s energy policy has evolved through three phases: 1949–1992, 1993–2002, and 2003–present, and China had made “a remarkable achievement to have expanded energy supply at a sufficient rate to support an economy that expanded by about 20-fold over the period 1978 to 2010.”⁵³ Generally, China’s energy consumption has shown several distinct characteristics. First, growth in energy consumption has been accompanied with a dramatic decline in energy intensity of use since reform and opening up. Second, the composition of energy consumption in China is unbalanced in comparison with other countries. Third, China’s energy consumption per capita is relatively small compared with that of the developed economies. Fourth, energy consumption in China is highly unbalanced between the rural and urban sectors as well as across the Chinese provinces. Finally, China’s energy demand has also been influenced by the growth in demand for energy-intensive products, such as automobiles and air-conditioners.⁵⁴ It is worth of being noted here that although China is keen to

11/19/content_9222.htm.

51 U.S.-China Joint Presidential Statement on Climate Change, 25/09/2015, See: <https://www.whitehouse.gov/the-press-office/2015/09/25/us-china-joint-presidential-statement-climate-change>.

52 CNPC 2014 Annual Report, p. 5.

53 Philip Andrews-Speed, *China’s Long Road to a Low-Carbon Economy: An Institutional Analysis*, Transatlantic Academy, Paper Series, May 2012, p. 5, See: http://www.transatlanticacademy.org/sites/default/files/publications/AndrewsSpeed_China'sLongRoad_May12_web.pdf.

54 Paul Crompton and Yanrui Wu, *Energy consumption in China: past trends and future directions*,

engage with the international market to meet its oil demand, its overseas activities cannot guarantee its energy security.⁵⁵ While China keeps trying to secure its energy supply with the external resources, it will have to accelerate its steps to a low-carbon economy.

Energy Type	2005	2014	2020
Nuclear Energy	6.96GW	20.08GW	58.00GW*
Hydropower	117.39GW	304.86GW	350.00GW
Wind Energy	1.26GW	96.57GW	200.00GW
Solar PV	0.07GW	24.86GW	100.00GW
Geothermal Energy			50.00 Mtce
Biodiesel	5000 tons		2.00M tons
Biomass Power	2.00GW		30.00GW

* with 30GW under construction

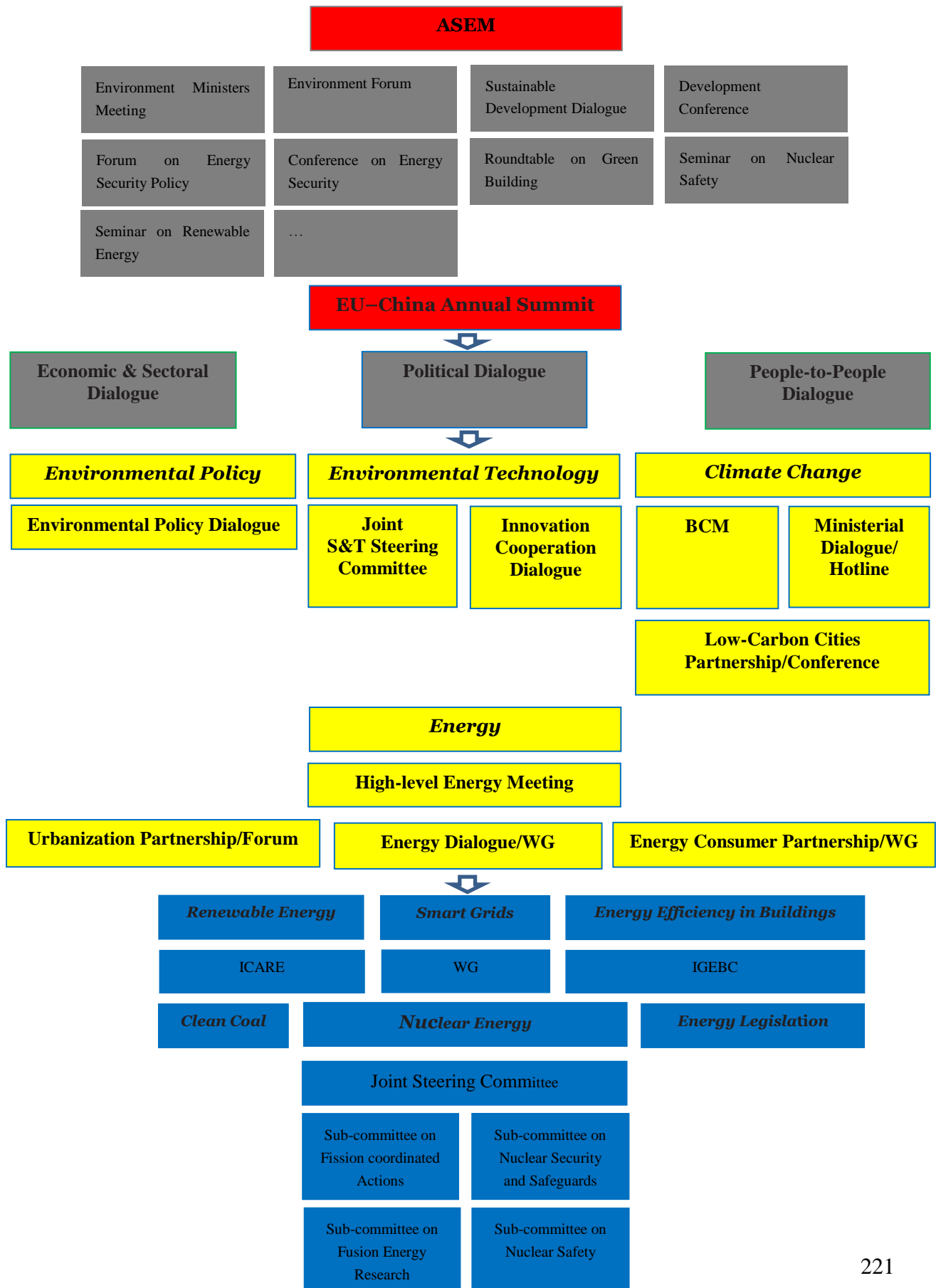
Figure 4 China's Non-fossil Energy Development Targets

Sources: Medium and Long-Term Development Plan for Renewable Energy in China, <http://www.china.org.cn/e-news/news070904-11.htm>; 2014–2020 Strategic Action Plan for Energy Development (2014–2020), http://www.gov.cn/zhengce/content/2014-11/19/content_9222.htm.

Energy Economics, Vol. 27, Iss. 1, 2005, pp. 195–208. China has been applying four strategies to meet its energy demand: 1) diversifying energy resources; 2) enhancing the existing oil and natural gas supply sources and exploring to find more new energy resource locations at the global level; 3) strengthening energy exploration and production of new oil fields domestically and encouraging international cooperation in offshore oil exploration and production; 4) increasing the number of Strategic Petroleum Reserve sites and raising mandatory stockpile requirements for major oil firms. See: Zhang Jian, *China's Energy Security: Prospects, Challenges, and Opportunities*, The Brookings Institution Center for Northeast Asian Policy Studies, July 2011, See: https://www.brookings.edu/wp-content/uploads/2016/06/07_china_energy_zhang_paper.pdf.

⁵⁵ Guy Leung, China's energy security: Perception and reality, *Energy Policy*, Vol. 39, Iss. 3, 2011, pp. 1330–1337.

Annex III. The Institutional Architecture of EU-China Environmental Cooperation



Annex IV. Chronology of EU-China Environmental Cooperation

1981

April, a delegation of EC DG ENER paid a visit to China.

1982

The China-EU Training Programme in Energy Management and Energy Efficiency was launched.

1985

September, China and the EU signed the Trade and Cooperation Agreement, in which environmental protection was listed as a subtopic of economic cooperation, while energy for the first time appeared in their official agreements.

October, a symposium on “the new technology revolution” took place in Beijing, marked the initiation of the EU-China S&T cooperation.

1986

December, the EU and China reached the Sino-European Dachen Island Complementary Energy Resource Demonstration Cooperative Project Agreement.

1987

July, the Sino-European Dachen Island Complementary Energy Resource Demonstration Cooperative Project commenced to be implemented.

1991

The EU-China S&T Working Group was organized, and further lifted to the EU-China Joint S&T Steering Committee in 1998.

1992

June, the EU-China Environmental Dialogue was established.

1994

March, the first meeting of the EU-China Energy Conference was convened in Brussels.

1996

March, the ASEM 1 was held in Bangkok, Thailand.

October, the second meeting of the EU-China Energy Conference was held in Beijing.

1997

February, the first meeting of the EU-China Energy Working Group was convened in Brussels. Since then, six more meetings had been held by 2005.

1998

April, the first EU-China Annual Summit was organized in London, UK.

December, the EU-China Agreement for Science and Technological Cooperation was signed and put into force in December, 1999. This agreement was renewed twice in 2004 and 2009, respectively.

1999

September, the LIEP began to be carried out.

December, at the second EU-China Annual Summit, environment was discussed by the EU and Chinese leaders for the first time.

2003

May, the EEP was launched, and closed in 2009.

July, the Natural Forest Management Programme was launched and closed in 2010.

November, the establishment of the EU-China Ministerial Environmental Policy Dialogue was announced.

2004

December, the EU-China Agreement for Science and Technological Cooperation was renewed.

2005

March, the seventh meeting of the EU-China Energy Working Group was held. At this meeting, the EU-China Dialogue on Energy and Transport Strategies was proposed. In addition, two action plans were adopted by the EU and China—Action Plan on Clean Coal, and Action Plan on Industrial Cooperation Energy Efficiency and Renewable Energies.

March, the first IGEBEC was organized, with the participation of the EU.

June, the second meeting of the EU-China Ministerial Environmental Policy Dialogue was held in Brussels.

September, the eighth EU-China Annual Summit was held in Beijing. At this summit, the EU and China 1) released the “Joint Declaration on Climate Change between China and the European Union” and decided to establish a partnership on climate change, 2) signed the EU-China Dialogue on Energy and Transport Strategies Memorandum of Understanding and initiated the EU-China Dialogue on Energy and Transport Strategies, 3) signed two major financing agreements for the China-EU biodiversity and river basin management programs.

2006

March 21, the first meeting of the EU-China Dialogue on Energy and Transport Strategies was organized.

March 30, the first meeting of the BCM took place in Vienna, Austria.

October, the China-EU Partnership on Climate Change Rolling Work Plan was formulated.

November, Phase I of the EU-China NZEC project was launched.

2007

February, the EU-China CDM Facilitation Project began to be implemented and closed in 2010.

2008

April 11–12, the first ASEM Forum on Energy Security Policy was held in Hanoi, Vietnam.

April 24, the third meeting of the EU-China Ministerial Environmental Policy

Dialogue was convened in Beijing.

April 24, the Agreement between Euratom and P.R. China for R&D Cooperation in the Peaceful Uses of Nuclear Energy was signed and took into effect in August 2008.

2009

May, the 11th EU-China Annual Summit was held in Prague, Czech Republic, where the “Joint Statement on Europe-China Clean Energy Center” was released and an agreement on the EU and China S&T Partnership Scheme was reached.

June, the ASEM partners held the first ASEM Ministerial Conference on Energy Security in Brussels.

November 10–11, the EU-China Workshop on Energy Law was jointly organized by the EC and SCLAO in Beijing.

November 30, at the 12th EU-China Annual Summit the Memorandum of Understanding launching phase II of the Near Zero Emission Coal Project, Memorandum of Understanding on Cooperation Framework on Energy Performance and Quality in the Construction Sector, and The Financing Agreement for the EU-China Environmental Governance Programme were released. Meanwhile, the EU-China Science and Technology Agreement was renewed again.

2010

January, the EU-China Smart Grid Working Group was organized.

April 29, the “Joint Statement on Dialogue and Cooperation on Climate Change” was released, established the EU-China Ministerial Dialogue on Climate Change and a hotline on climate change.

April 30, the EC2 was opened in Beijing, and closed in 2015.

July, the fourth meeting of the EU-China Energy Dialogue was held in Shanghai and on a ministerial level for the first time.

December, the “Joint Statement between MOST and DG Research and Innovation on Energy Research and Innovation” was released.

2012

February, the fourth meeting of the EU-China Ministerial Environmental Policy Dialogue was convened in Brussels.

March, China and the EU jointly built the ICARE at Huazhong University of Science & Technology, Wuhan.

May 3, the EU-China High-level Energy Meeting was held in Brussels. As consequences of this meeting, the EU and China released “EU-China Joint Declaration on Energy Security” and “Joint Statement for Enhanced Cooperation on Electricity Markets.” The release of “EU-China Joint Declaration on Energy Security” declared the establishment of the EU-China Strategic Energy Consumer Partnership.

May 3, the first High-level Conference of China-EU Partnership on Urbanization was convened in Brussels. By releasing the “Joint Declaration on China-EU Partnership on Urbanisation,” the establishment of the EU-China Partnership on Urbanization was declared.

June, the first ASEM Seminar on Nuclear Safety was organized in Singapore, and had been held annually by 2015.

July, the EU-China Energy Security Working Group was organized.

September, the two sides released the “Joint Declaration on Innovation Cooperation Dialogue” at their 15th annual summit.

December, a high-level forum on EU-China energy security cooperation was convened.

2013

February, the first meeting of the EU-China Energy Security Working Group was held in Beijing, in which the process of drafting the EU-China Roadmap on Energy Cooperation (2016–2020) was initiated.

July, the fifth meeting of the EU-China Ministerial Environmental Policy Dialogue was held in Beijing.

November 21, the second EU-China Urbanization Forum was held in Beijing.

2014

September, the first ASEM Roundtable on Green Building was organized in India,

while the second roundtable was held in 2015 in India.

2015

March, a concept note of EU-China Roadmap on Energy Cooperation (2016–2020) was published.

June 30, the 17th EU-China Annual Summit was held in Brussels. At the summit, the European and Chinese leaders released the “Joint Statement on Climate Change,” and launched the EU-China Low-carbon Cities Partnership.

June 30, the third EU-China Urbanization Forum took place in Brussels.

2016

April, the Up-scaling and Mainstreaming Sustainable Building Practices in Western China project was initiated.

June 28–29, the EU-China Low-Carbon Cities Conference was held in Wuhan, China.

June 29, the EU-China Roadmap on Energy Cooperation (2016–2020) was agreed.

July, the 18th EU-China Annual Summit was held in Beijing. At this summit, a ceremony regarding to the EU-China urbanization partnership was organized with 24 cities from China and Europe reached agreements on cooperation projects.

Annex V. A List of Questions and Interviewees

Questions

- 1, How important do you think the energy cooperation is in the general EU-China relations?
- 2, How do you assess the current EU-China energy cooperation?
- 3, What roles do you think institutions are playing in the EU-China energy cooperation?
- 4, What are the challenges that the EU-China energy cooperation is facing, and how do you think the EU and China can tackle these challenges from an institutional perspective?
- 5, How do you assess the relationship among the EU-China High-level Energy Meeting, the Energy Dialogue, and the Urbanization Partnership?
- 6, How important do you think the roles of the EU-China Energy Conference and the High-level Energy Meeting in the EU-China energy relationship are, and what do you think about the future prospect of the EU-China High-level Energy Meeting?
- 7, What role do you think the EU-China Urbanization Forum is playing today, and how do you think about its future prospect?
- 8, The EU-China Low-Carbon Cities Partnership was established in 2015. How do you comment on its work in the past one year and how do you think the EU-China energy relationship will benefit from this partnership?
- 9, How do you see the relationship between the EU-China Low-Carbon Cities Partnership and the EU-China Urbanization Partnership?
- 10, What is inter-link between the EU-China Energy Conference and the EU-China High-level Energy Meeting?
- 11, How important do you think climate change is in the EU-China relations?
- 12, How important do you think the EU-China climate change dialogue built in 2010?

13, How is the NZEC project proceeding?

14, What are the motives do you think that the EU engages with China's energy/climate change governance? And what is EU gaining from this engagement?

15, To what extent do you think the EU is affecting China's domestic energy/climate change policymaking and its stance in international climate change negotiations?

16, What are the opportunities and challenges do you think for the EU-China energy/climate change cooperation in the future?

Interviewees

Ms Coraline Goron, PhD Candidate, Université libre de Bruxelles and Warwick University

Professor David Fouquet, Vice President of the Executive Board of Centre Européen de Recherches Internationales et Stratégiques and director of the Asia-Europe Project

Professor Duncan Freeman, Research Fellow, College of Europe and Vrije Universiteit Brussel

Ms Eva de Bleeker, International Relations Officer, DG ENER

Mr. Hannes Dekeyser, Programme Coordinator of European Institute for Asian Studies

Mr Jim Stoopman, Programme Coordinator of European Institute for Asian Studies

Ms Liu Xiaoying, Founder and director of Natureherit Overall Design

Ms Virginia Marantidou, Program coordinator at the German Marshall Fund in Brussels

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