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From Environment to Energy: China's Reconceptualization of Climate Change

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FROM ENVIRONMENT TO ENERGY: CHINA'S RECONCEPTUALIZATION OF CLIMATE CHANGE

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I. INTRODUCTION

The United Nations Climate Change Conference (COP15) in Copenhagen in December 2009 failed to achieve a common ground for a stronger global climate regime.[1] Nor was any decision made to extend

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[1] Yvo de Boer, the United Nations official who managed the Copenhagen climate negotiations, was quoted as saying that the Copenhagen Conference hardly moved the treaty process from where it was in 2007, when the world's countries pledged to complete a binding agreement in 2009 at Copenhagen. It was also reported that many delegates of the 193 countries left Copenhagen "in a sour mood, disappointed that the pact lacked so many elements they considered crucial, . . ." Andrew C. Revkin & John M. Broder, *A Grudging Accord in Climate*

the Kyoto Protocol,[2] which is set to expire in 2012. There have been numerous efforts to reinvigorate international talks on the Kyoto Protocol, from the Bali Conference (December 2007) and the Group of Eight (G8) meeting in Tokyo, Japan (July 2008) to the more recent G8 meeting in L'Aquila, Italy (July 2009). None has achieved much considering the increasing meltdown of the Arctic ice.[3] In the United States, the Climate Change Bill was passed by the House of Representatives on June 26, 2009 by a small margin.[4] It is expected that the Climate Change Bill will face more challenges in the Senate.[5]

Talks, N.Y. TIMES, Dec. 20, 2009, at A1. Immediate responses to the Copenhagen Conference differed enormously. General tone in the media in the European Union, Canada, Australia, New Zealand, and Singapore tended to be more critical and regarded the Conference a failure. *See, e.g.*, Editorial, *Dismal Outcome at Copenhagen Fiasco*, FIN. TIMES (Asia Ed.), Dec. 21, 2009, at 6; *Low Targets, Goals Dropped: Copenhagen Ends in Failure*, GUARDIAN, Dec. 19, 2009, at 1; *Direct Action Is Needed Now Copenhagen Has Failed Us*, CANBERRA TIMES, Dec. 22, 2009, at A15. By contrast, official comments on the Copenhagen Conference in the United States and China are more positive, see, Fu Jing & Li Jing, *China Played "Constructive" Role, Wen Says*, CHINA DAILY, Dec. 22, 2009, at 1; *China, U.S. Praise Nonbinding Climate Agreement*, WASH. POST, Dec. 21, 2009, at A16. Even the liberal newspaper New York Times sounds cautiously positive about the Conference, see, Editorial, *Copenhagen, and Beyond*, N.Y. TIMES, Dec. 21, 2009, at A30 (noting "Copenhagen's achievements are not trivial, given the complexity of the issue and the differences among rich and poor countries.").

[2] Kyoto Protocol to the United Nations Framework Convention on Climate Change, UN Doc FCCC/CP/1997/7/Add.1, Dec. 10, 1997; 37 ILM 22 (1998), *available at* http://unfccc.int/resource/docs/convkp/kpeng.pdf [hereinafter Kyoto Protocol]. The United Nations Framework Convention on Climate Change ("UNFCCC", or "Climate Change Convention") was adopted at the United Nations Conference on Environment and Development at Rio de Janeiro on May 9, 1992 (also known as "Earth Summit"). The United Nations Framework Convention on Climate Change, 1771 UNTS 107; S. Treaty Doc No. 102-38; U.N. Doc. A/AC.237/18 (Part II)/Add.1; 31 ILM 849 (1992), *available at* http://unfccc.int/resource/docs/convkp/conveng.pdf. UNFCCC entered into force on March 21, 1994.

[3] Juliet Eilperin & Mary Beth Sheridan, *New Data Show Rapid Arctic Ice Decline*, WASH. POST, Apr. 7, 2009, at A03. New evidence, including satellite data, suggests that the average multiyear wintertime sea ice cover in the Arctic in 2005 and 2006 was nine feet thick, a significant decline from the 1980s. *Id.* For information on the impacts of climate change, see INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY 655 (Martin Parry et al. eds., 2007) *available at* http://www.ipcc.ch/publications_and_data/publications_ipcc_fourthassessment_report_wg2_report_impacts_adaptation_and_vulnerability.htm.

[4] American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009), *available at* http://energycommerce.house.gov/Press_111/20090515/hr2454.pdf. *See also* Steven Mufson, David A. Fahrenthold & Paul Kane, *In Close Vote, House Passes Climate Bill*, WASH. POST, June 27, 2009, at A01; John M. Broder, *House Backs Bill, 219-212, to Curb Global Warming*, N.Y. TIMES, June 27, 2009, at A01.

[5] The New York Times, which was in favor of the Climate Change Bill, tried to convey a message to the U.S. Senate in an editorial: "We hope for even better in the Senate. What there cannot be is backsliding. Global negotiations to replace the expiring Kyoto agreement on climate change

However, in August 2009 before the Senate even had a chance to look at the Climate Change Bill, the coal producers and oil groups were already trying to sabotage the process.[6] In Great Britain, a white paper was presented by Secretary of State of Energy and Climate Change Ed Miliband offering an ambitious blueprint of a low-carbon society by 2020.[7] An editorial in The Guardian commented, "Britain's record up to now has been so poor that there is reason to hope that, at last, it might just happen."[8]

In 2007 China overtook the United States as the top emitter of carbon dioxide (CO_2), the primary greenhouse gas that is causing global climate change.[9] It is in this context that environmentalists in the West are increasingly intrigued by the question of how to turn China green.[10] However, Chinese leaders persistently rejected the idea of a cap on carbon emissions for China. In his interview with the London-based *Financial Times* in February 2009, Premier Wen Jiabao made it clear that

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resume in the fall. The world is waiting for the United States, after years of indifference, to take a strong leadership role. So is the American public." Editorial, *Climate in the Senate*, N.Y. TIMES, July 1, 2009, at A32.

[6] Stephanie Strom, *Coal Group Is Linked to Fake Letters on Climate Bill*, N.Y. TIMES, Aug. 5, 2009, at A12 (a trade group representing coal producers and power companies indirectly hired a lobbying firm that sent fake letters to lawmakers purporting to be from nonprofit groups opposed to the Climate Change Bill); Stephanie Strom, *More Fake Letters to Congress on Energy Bill*, N.Y. TIMES, Aug. 19, 2009, at A18 (referring to the Climate Change Bill); David A. Fahrenthold, *Oil Group's "Citizen" Rally Memo Stirs Debate*, WASH. POST, Aug. 16, 2009, at A6 (discussing how a petroleum industry trade group asked oil companies to recruit employees and retirees to attend rallies attacking the Climate Change Bill); Clifford Krauss & Jad Mouawad, *Oil Industry Backs Protests of Emissions Bill*, N.Y. TIMES, Aug. 19, 2009, at B1 (referring to the Climate Change Bill).

[7] U.K. GOVT., THE UK LOW CARBON TRANSITION PLAN: NATIONAL STRATEGY FOR CLIMATE AND ENERGY (2009), *available at* http://www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx.

[8] Editorial, *Climate Change: Green Dreams*, THE GUARDIAN, July 16, 2009, at 32.

[9] The Netherlands Environmental Assessment Agency reported in June 2008 that China had overtaken the United States in 2007 as the largest emitter of carbon dioxide. *See* Press Release, Netherlands Environmental Assessment Agency, Global CO_2 Emissions: Increase Continued in 2007 (June 13, 2008); Elisabeth Rosenthal, *China Increases Lead as Biggest Carbon Dioxide Emitter*, N.Y. TIMES, June 14, 2008, at A5.

[10] Fred Guterl & Craig Simons, *How America Can Turn China Green*, NEWSWEEK, Feb. 23, 2009, at 0; Jonathan B. Wiener, *Climate Change Policy and Policy Change in China*, 55 UCLA L. REV. 1805, 1805-06 (2008); Jeffrey Logan, Joanna Lewis & Michael B. Cummings, *For China, The Shift To Climate-friendly Energy Depends On International Collaboration*, BOSTON REV. Jan.-Feb. 2007, at 18, 18; Eric Posner & Cass Sunstein, Comment, *Pay China to Cut Greenhouse Gas Emissions*, FIN. TIMES, Aug. 6, 2007, at 11; Cass R. Sunstein, *The Complex Climate Change Incentives of China and the United States* (Univ. of Chicago Law & Econ., Olin Working Paper No. 352, Aug. 2007).

China is not ready to accept a cap at the Copenhagen Conference in December 2009. He said, "it's difficult for China to take quantified emission reduction quotas at the Copenhagen conference, because this country is still at an early stage of development."[11]

Domestically and internationally, by the first half of 2009 it was already questionable whether the Copenhagen Conference could achieve anything.[12] Anthony Giddens warned—in an otherwise inspiring book on climate change—that "doomsday is no longer a religious concept, a day of spiritual reckoning, but a possibility imminent in our society and economy."[13] In such a context, it becomes imperative to revisit some of the fundamental issues in the Kyoto Protocol framework. Are timetables and targets really the best way to regulate climate change?[14] Does the current framework create bad politics?[15] Where are the powerful driving forces towards a low-carbon society?

This essay is motivated by these fundamental questions. It aims to offer an analytic framework for understanding the policy-making in

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[11] Lionel Barber, *Transcript: Wen Jiabao*, FIN. TIMES (Feb. 2, 2009), *available at* http://www.ft.com/cms/s/-0/-795d2bca-f0fe-11dd-8790-0000779fd2ac.html?nclick_check=1.

[12] David Adam, *UN's Climate Chief Warns of Real Risk of Failure at Climate Change Talks*, GUARDIAN.CO.UK, Aug. 14, 2009, http://www.guardian.co.uk/environment/2009/aug/14/bonn-climate-change-talks. *See also* Emma Duncan, *Wonderful, Wonderful Copenhagen? Don't Count on a Climate-Change Deal*, THE ECONOMIST (Nov. 19, 2008), at 103.

[13] ANTHONY GIDDENS, THE POLITICS OF CLIMATE CHANGE 228 (2009).

[14] An alternative is a carbon tax. *See* Richard N. Cooper, *The Case for Charges on Greenhouse Gas Emissions* 1 HARV. KENNEDY SCH. PROJECT ON INT'L CLIMATE AGREEMENTS (Oct. 2008), http://belfercenter.ksg.harvard.edu/files/CooperWeb4.pdf; Richard N. Cooper, *Toward a Real Global Warming Treaty*, FOREIGN AFF., Mar.-Apr. 1998, at 66; William D. Nordhaus, *After Kyoto: Alternative Mechanisms to Control Global Warming*, 96 AM. ECON. REV. 31 (2006); William D. Nordhaus, Professor, Yale U., Keynote Address at Climate Change: Global Risks, Challenges, and Decisions (Mar. 11, 2009) *available at* http://climatecongress.ku.dk/speakers/professorwilliamnordhaus-plenaryspeaker-11march2009.pdf (arguing for a harmonized global climate tax). Dr. James Hansen, the NASA scientist, has been a long advocate of carbon tax. *See Scientific Objectives for Climate Change Legislation Before the H. Comm. on Ways & Means*, 111th Cong. (2009) (Statement of James E. Hansen, Adjunct Professor, Earth Institute at Columbia U.), *available at* http://www.columbia.edu/~jeh1/2009/WaysAndMeans_20090225.pdf.

[15] Daniel Bodansky believes that the exclusive focus on targets and timetables in climate change negotiations is based on a view that the stalemates are a collective action problem. *See* Daniel Bodansky, *Targets and Timetables: Good Policy but Bad Politics?*, *in* ARCHITECTURE FOR AGREEMENT: ADDRESSING GLOBAL CLIMATE CHANGE IN THE POST-KYOTO WORLD 57-66 (Joseph E. Aldy & Robert N. Stavins eds., 2007) (commenting on Jeffrey Frankel, *Formulas for Quantitative Emission Targets*, *in* ARCHITECTURE FOR AGREEMENT: ADDRESSING GLOBAL CLIMATE CHANGE IN THE POST-KYOTO WORLD *supra*, 31-56); Daniel Bodansky, *The Legitimacy of International Governance: A Coming Challenge for International Environmental Law?* 93 AM. J. INT'L L. 596 (1999).

one of the countries that is a key member of the world's "carbon community"—China. It tries to expose the organizing conceptual frameworks through which climate change as an issue is defined, understood, and reconciled. In other words, how climate change is conceptualized. A better understanding of the conceptualization process in key countries will shed light on ways to improve the design of the existing international framework. In doing so, this essay joins an increasing body of literature on framing climate change in domestic or international arenas.[16] It is a widely shared view in this body of literature that the United States (before President Obama took power) largely looked at climate change from an economic competitiveness point of view; thus, the Bush administration insisted that India and China have to be included in order for the U.S. to commit itself.[17] On the other hand, the European Union largely regarded climate change from an ethical point of view, thus considering it a duty for the U.S. and EU to reduce carbon emissions.[18]

This essay, though in line with this approach, takes a slightly different angle in analyzing China's framing of climate change. It presents two perspectives adopted in the official policymaking processes: one was the negotiation of the Climate Change Convention and the Kyoto Protocol, roughly from 1989 to 2002, when climate change was defined as an environment issue;[19] the second was post-Kyoto period, from 2003 to the present, when climate change was conceptualized as an

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[16] For example, Loren R. Cass compared the framing of climate change in the United States, Great Britain, Germany and European Union by looking into the international norms and domestic norms, as well as their relations with material interests. *See* LOREN R. CASS, THE FAILURES OF AMERICAN AND EUROPEAN CLIMATE POLICY: INTERNATIONAL NORMS, DOMESTIC POLITICS, AND UNACHIEVABLE COMMITMENTS (2006).

[17] *See generally* CLIMATE CHANGE AND AMERICAN FOREIGN POLICY (Paul G. Harris ed., 2000); *see also* Miranda A. Schreurs, *The Climate Change Divide: The European Union, the United States, and the Future of the Kyoto Protocol, in* GREEN GIANTS?: ENVIRONMENTAL POLICIES OF THE UNITED STATES AND THE EUROPEAN UNION 207-30 (Norman J. Vig & Michael G. Faure eds., 2004). In the United States, the notion of competitiveness exists in a wide range of topics in social discourse. *See, e.g.*, Paul Krugman, *Competitiveness: A Dangerous Obsession*, FOREIGN AFF., Mar.-Apr. 1994, at 28. However, Harris also warned that the United States' position should not be overstated. Harris noted that the Clinton Administration, in particular, started to embrace the notion of international environmental equity, defined as a fair and just distribution of the benefits, burdens, and decision making authority associated with international environmental relations, as an important feature of its foreign policy. *See* PAUL G. HARRIS, INTERNATIONAL EQUITY AND GLOBAL ENVIRONMENTAL POLITICS: POWER AND PRINCIPLES IN U.S. FOREIGN POLICY 165 (2001).

[18] *See generally* CASS, *supra* note 16.

[19] *Infra*, Part II.

energy policy issue.[20] Thus, the essay argues, in the last two decades (between 1989 and 2009) there has been a significant change in China's policy on climate change. One immediate question is: given that climate change is perhaps as closely linked with the environment as with energy, what is the difference? The difference, as will be explained in Section D of Part III of this essay, lies in policy implementation and internal dynamics in China's response to climate change that must be understood in the domestic context.[21] This essay also attempts to shed light on a redesign of the global climate regime after Copenhagen.[22]

II. NEGOTIATING THE UN CLIMATE CHANGE CONVENTION

China's environment suffers long lasting deficits in two areas: investment and governance. Investment refers to the financial, technological input, while governance means the institutional channel through which environment issues are identified and managed. Environmental pollution was largely ignored in Mao's China during the 1950s-1970s. [23] In the 1980s, when China was on its "four modernization" path there were some efforts to control pollution but with little success.[24] On the eve of the 1989 crisis, Baruch Boxer, an ecologist who closely followed China's environmental situation during this period, observed: "China's potential for finding a workable balance between conservation and growth remains problematic."[25] This was the domestic

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[20] *Infra*, Part III.

[21] *Infra*, Part III, Sec. D.

[22] *Infra*, Part IV.

[23] One notorious example is the Great Leap Forward of 1958, when a large number of primitive steel mills were set up even though the steel they made was useless. The other was during the 1960s Third Front movement, when large-scale industrial complexes were built in remote areas for strategic reasons. They proved to be environmental disasters. *See* JUDITH SHAPIRO, MAO'S WAR AGAINST NATURE: POLITICS AND THE ENVIRONMENT IN REVOLUTIONARY CHINA (2001); ELIZABETH ECONOMY, THE RIVER RUNS BLACK: THE ENVIRONMENTAL CHALLENGE TO CHINA'S FUTURE 47-57 (2004).

[24] For the best collection of literature on environmental policy and law during the 1980s, see generally LESTER ROSS & MITCHELL A. SILK, ENVIRONMENTAL LAW AND POLICY IN THE PEOPLE'S REPUBLIC OF CHINA (1987). *See also* LESTER ROSS, ENVIRONMENTAL POLICY IN CHINA (1988); ECONOMY, *supra* note 23, at 47-57 (providing a good review of the environmental problem in China since the 1980's).

[25] Baruch Boxer, *China's Environmental Prospects*, 29 ASIAN SURV. 669, 686 (1989).

context of China's participation of climate negotiations that eventually led to the Climate Change Convention and the Kyoto Protocol.

This Part of the essay presents a brief history of the climate negotiations, largely from 1989, when the Climate Change Convention negotiations started, to late 1997, when the Kyoto Protocol was concluded. It pays particular attention to how the Chinese government understood the issue of climate change. Framing an issue like climate change is, of course, a complex process in which many actors and elements are involved. In this essay, discussion is limited to the official actors and their views, because the focus is on how the government in China conceptualized climate change.[26] This Part considers the following elements to reflect this complex process: (a) who is in charge of the negotiations, (b) whose perspectives are influential in the internal deliberation, and (c) who is making decisions in response to the issues identified.

A. BEFORE CLIMATE NEGOTIATIONS BEGAN

In the 1980s, the basic bureaucratic structure for the negotiations was already in place. The State Council—China's cabinet—set up an Environment Protection Committee (SC-EPC) in 1984.[27] Its stated mission was to formulate policies on the environment and to lead and coordinate the nation's environmental protection work.[28] From 1984 to 1998, the SC-EPC was the top policymaker on the environment in the Chinese government.[29] In 1984, the National Environmental Protection Bureau (NEPB), headed by Qu Geping, was set up under the Ministry of

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[26] *See* Dongsheng Zang, *Green from Above: China's New Developmental Strategy and the Politics of Law*, 45 TEX. INT'L L.J. 210 (2009) (discussing the distance between the official views and small businesses).

[27] ST. COUNCIL, GUANYU HUANJINBAO HU GONGZUO DE JUEDING [RESOLUTION OF THE STATE COUNCIL ON ENVIRONMENT PROTECTION WORK] (May 8, 1984) [hereinafter ST. COUNCIL 1984a], *reprinted in* GUOWUYUAN HUANJING BAOHU WEIYUANHUI WENXIAN XUANBIN [COLLECTED DOCUMENTS OF THE STATE COUNCIL ENVIRONMENTAL PROTECTION COMMISSION], at 1-4 (1988) (P.R.C.).

[28] *Id.*

[29] This is demonstrated in the climate change negotiations described in Sections B, C and D of Part II of this essay, *infra*. The power and authority of SC-EPC during this period was also helped by the increasing buildup of the structure and personnel of the National Environment Protection Bureau (NEPB), and its successor State Environment Protection Bureau (SEPB). This process of bureaucratic buildup in NEPB and SEPB (on national and local levels) is discussed in detail in Abigail R. Jahiel, *The Organization of Environmental Protection in China*, 156 CHINA Q. 757 (1998) (Special Issue: China's Environment).

Urban and Rural Construction.[30] NEPB was the executive arm of the SC-EPC. [31] From 1984 to 1988, the SC-EPC was chaired by Li Peng, then the Vice-Premier. After he became Premier in 1987, Li Peng was succeeded by Song Jian, then Commissioner of the State Science and Technology Commission and a State Counselor of Vice-Premier level in the Chinese bureaucratic hierarchy.[32]

In 1988, when the United Nations' Intergovernmental Panel on Climate Change (IPCC) was formed, [33] China Meteorological Administration (CMA) became the contact agency in China.[34] The year 1988 also saw the formation of the National Environmental Protection Agency (NEPA), an expanded and more independent governmental agency to succeed NEPB. [35] In the meantime, the NEPA was working on national environmental legislation, the Environmental Protection Act,[36] which was passed by the national legislature—the National People's Congress—in December 1989. However, work with the U.N. was temporarily disrupted in June 1989 when the Tiananmen Massacre occurred on June 4th. The incident, which resulted in widespread condemnation and economic sanctions from the West, pushed Beijing into diplomatic isolation. Despite all the uncertainty at the time, the scientific community in China was strongly in favor of continuing the work with the UN and keeping communications with the international

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[30] Jahiel, *supra* note 29, at 768-69.

[31] ST. COUNCIL 1984a, *supra* note 27.

[32] Song Jian had an astonishingly successful career during the 1960s and 1970s, and became a leading expert in China's defense research for his expertise and contribution in missile guidance system. In the late 1970s and early 1980s, he became interested in applying cybernetics to social and ecological issues, and he played a key role in shaping China's population policy. *See generally* SUSAN GREENHALGH, JUST ONE CHILD: SCIENCE AND POLICY IN DENG'S CHINA 125-68 (2008). Susan Greenhalgh's study suggests that Song Jian was influenced by the work of the Club of Rome in late 1970s. *Id.* at 131-35.

[33] *See generally* Daniel Bodansky, *Prologue to Climte Change Convention*, *in* NEGOTIATING CLIMATE CHANGE: THE INSIDE STORY OF THE RIO CONVENTION 45-74 (Irving M. Mintzer & J. Amber Leonard eds., 1994).

[34] *See generally* CHAO QINGCHEN, ET AL., THE ROLE AND IMPACT OF IPCC IN CLIMATE CHANGE AND CHINA'S PARTICIPATION IN IT (2008) (P.R.C.), *available at* http://www.ipcc.cma.gov.cn/Website/index.php?ChannelID=21&NewsID=476.

[35] Jahiel, *supra* note 29, at 768-69.

[36] The Environmental Protection Act, passed by the Seventh National People's Congress Standing Committee on Dec. 26, 1989, *Environmental Protection Law of the People's Republic of China (1989)*, CHINESE L. & GOV'T, May-June 2004, at 58-65. The Act of 1989 replaces the earlier EPA of 1979, passed on Sept. 13, 1979 by the Fifth National People's Congress Standing Committee, English translation, *Environmental Protection Law (for Trial Implementation) of the People's Republic of China (1979)*, CHINESE L. & GOV'T, May-June 2004, 51-57.

environment movements open. Environmental engineers looked to the West, especially the United States, for inspiration and, increasingly, research funding.[37] In 1991, the U.S. National Science Foundation established a "Panel on Global Climate Change Sciences in China," which organized a couple of visits to China in 1991 and interviewed members of the Chinese scientific community. The American experts observed, there "has been ever increasing pressure on Chinese institutions to seek international cooperation to carry out research projects, to gain access to expertise, training opportunities and equipment."[38] On the other hand, for the hardliners who have now been in control, the environment became one of the few diplomatic channels still open to the outside world. Thus, they also needed the work with the UN to continue so as to "break the ice" of isolation.[39] The decision to continue the climate talks eventually led to China's signing of the Climate Change Convention on June 1, 1992 and ratification on January

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[37] In the science and technology sector, China's reform during the 1980s forced the research institutions look to the market for survival because funding from the state was drying up. Keith Clemenger observed: "The fundamental problem in the short term is not so much financing research project themselves, but covering the salary and benefits of research staff. This is still beyond the means of the science funders and remains a major difficulty for the institutions involved." Keith Clemenger, *New Directions in the Management and Funding of Science Research in China*, CHINA EXCHANGE NEWS, Spring 1992, at 5. Frustration and alienation was widespread in the scientific communities in China, which led to political dissidence among some of the top scientists. *See generally* H. LYMAN MILLER, SCIENCE AND DISSENT IN POST-MAO CHINA (1996).

[38] NATIONAL RESEARCH COUNCIL, COMM. ON SCHOLARLY COMMC'N WITH THE P.R.C, PANEL ON GLOBAL CLIMATE CHANGE SCIENCES IN CHINA, GLOBAL CHANGE: OPPORTUNITIES FOR COLLABORATION 39 (1992). According to Elizabeth Economy, "agencies such as NEPA and the [China Meteorological Administration], which traditionally had been concerned with issues linked to the debate on global climate change (for example, energy conservation or pollution monitoring) were especially driven to access the ideas of the foreign scientific community." Elizabeth Economy, *Chinese Policy-making and Global Climate Change: Two Front Diplomacy and the International Community*, *in* THE INTERNATIONALIZATION OF ENVIRONMENTAL PROTECTION 19, 24 (Miranda A. Schreurs & Elizabeth Economy eds., 1997). In 1980, the U.S. Environment Protection Agency's Atmospheric Sciences Research Laboratory and the Chinese State Environmental Protection Bureau were used to help China monitor the air quality in Beijing. William E. Wilson, *Cooperative Research in Atmospheric Science Under the US-PRC Environmental Protection Protocol*, CHINA EXCHANGE NEWS, June 1987, at 17, 17-18.

[39] Jonathan Harrington, *'Panda Diplomacy': State Environmentalism, International Relations and Chinese Foreign Policy*, *in* CONFRONTING ENVIRONMENTAL CHANGE IN EAST AND SOUTHEAST ASIA: ECO-POLITICS, FOREIGN POLICY, AND SUSTAINABLE DEVELOPMENT 109-111 (Paul G. Harris, ed., 2005) (discussing the similarity between China and Hungary in "environmental diplomacy"); *see also* Cai Shouqiu & Mark Voigts, *The Development of China's Environmental Diplomacy*, 3 PAC. RIM L. & POL'Y J. (SPECIAL ISSUE) 17, 25 (1993).

5, 1993.[40] The Kyoto Protocol was signed on May 29, 1998 and ratified on August 30, 2002.[41]

B. CHINA'S 1990 POSITION ON CLIMATE CHANGE

Even though the hardliners in Beijing decided to continue climate talks, attempts were made to control the processes. This is most clearly demonstrated in China's first policy statement on climate change, "China's Principles and Position on Global Environmental Issues," announced in July 1990 at SC-EPC's 18th meeting.[42] The statement set fundamental principles in a variety of global environmental issues covering climate, ozone, and biodiversity. These principles and positions were to be restated over and over again in subsequent years. The principles included: (a) environmental protection and economic development must be promoted hand in hand; (b) developed countries are mainly responsible for the environment problems, thus must bear the costs accordingly; (c) sovereignty is inalienable and any interference in domestic issues is not allowed; (d) developing countries should be given a stronger voice in global environmental issues, and developed countries should assist developing countries in finance and technology transfer; and (e) as a responsible nation, China will actively take part in global environmental issues.[43] On climate change, the 1990 policy statement laid out the following positions: that China would actively participate in the negotiations; that developed countries are mainly responsible for climate change, including their duty to provide assistance to developing

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[40] The Standing Committee of the National People's Congress ratified the UNFCCC on January 5, 1993. Status of Ratification of the United Nations Framework Convention on Climate Change, http://www.ciesin.org/docs/008-587/008-587.html (last visited Aug. 20, 2009).

[41] Shao Zongwei, *Nation Approves Kyoto Protocol*, CHINA DAILY, Sept. 4, 2002, http://english1.china.org.cn/english/environment/41641.htm. Full text of Premier Zhu Rongji's statement is made available at the website of the United Nation's World Summit on Sustainable Development. H.E Zhu Rongji, Premier of the State Council of the P.R.C., Statement at the World Summit on Sustainable Development (Sept. 3, 2002), *available at* http://www.un.org/events/wssd/statements/chinaE.htm [hereinafter Premier Zhu Rongji's 2002 statement].

[42] ST. COUNCIL ENV'T PROT. COMM'N, ZHONGGUO GUANYU QUANQIU HUANJING WENTI DE YUANZE LICHANG [CHINA'S PRINCIPLES AND POSITIONS ON GLOBAL ENVIRONMENTAL ISSUES] (July 6, 1990) [hereinafter SC-EPC 1990a], *reprinted in* ERSHI SUI DE HUANJING XINGZHENG ZAI ZHONGUO [TWENTY YEARS OF ENVIRONMENT ADMINISTRATION IN CHINA], at 53-55 (1994) (P.R.C.).

[43] *Id.*

countries; and that China will take efforts to improve energy efficiency, but not to promise any specific cap on carbon dioxide emission.[44]

It is important to note that most of these viewpoints laid out in the principles were not new. China's developing-country perspective, its insistence on sovereignty, and emphasis on developed countries' taking responsibility were all present in ozone layer and hazardous waste negotiations before the 1989 Tiananmen tragedy.[45] What was new was the last point, that China would not make any commitment on carbon dioxide. This is perhaps where the top leadership decided to take a hard line approach in response to the sanctions from the West.[46] This was a political decision because at the time the top leadership in China did not have scientific data on climate change and could not have possibly comprehended the implications of that stance.[47] IPCC did not adopt their first scientific report until August 1990.[48]

Bureaucratic control soon followed the position statement. As international environmental negotiations intensified, the State Planning Commission, the Ministry of Energy, and the Ministry of Foreign Affairs dominated the subsequent climate negotiations that eventually led to the Rio de Janeiro Conference in 1992. These departments' interests differed from those of environmental engineers at NEPA and climate scientists

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[44] *Id.*

[45] CHINESE DELEGATION, GUANYU ZHIDING KONGZHI WEIXIAN FEIWU YUEJING ZHUANYI JIQI CHUZHI BASAIER GONGYUE WAIJIAO DAHUI DE BAOGAO [REPORT ON PARTICIPATION IN THE MAKING OF THE 'BASEL CONVENTION ON THE CONTROL OF TRANS-BOUNDARY MOVEMENTS OF HAZARDOUS WASTES AND THEIR DISPOSAL' DIPLOMATIC CONFERENCE] (Apr. 8, 1989) [hereinafter SC-EPC 1989a], *reprinted in* GUOWUYUAN HUANJING BAOHU WEIYUANHUI WENJIAN HUIBIAN ER [COLLECTED DOCUMENTS OF THE STATE COUNCIL ENVIRONMENTAL PROTECTION COMMISSION II], at 116-21 (1995) (P.R.C.) [hereinafter, SC-EPC 1995]; CHINESE DELEGATION, GUANYU CANJIA BAOHU CHOUYANGCENG HE'ERXINGJI GUOJI HUIYI DE ZONGJIE [WORK REPORT ON PARTICIPATION IN THE HELSINKI INTERNATIONAL CONFERENCE ON PROTECTION OF THE OZONE LAYER] (May 8, 1989) [hereinafter SC-EPC 1989b], *reprinted in* SC-EPC 1995, *id*, at 121-38.

[46] On some other issues, Beijing took a hard-line position as well. *See, e.g.*, Harry Harding, *The Impact of Tiananmen on China's Foreign Policy*, 1 NBR ANALYSIS 5, 5-17 (1990); Rosemary Foot, *China's Foreign Policy in the Post-1989 Era*, *in* CHINA IN THE 1990S 234, 240 (Robert Benewick & Paul Wingrove eds., 1995); Youwei Chen, *China's Foreign Policy Making As Seen Through Tiananmen*, 12 J. CONTEMP. CHINA 715, 715-720 (2003).

[47] In November 1990, the Chinese delegation that attended the Second World Climate Conference in Geneva complained in their internal memo about the lack of climatic data in China. *Infra* text accompanying note 60.

[48] Bodansky, *supra* note 33; Daniel Bodansky, *The U.N. Framework Convention on Climate Change: A Commentary*, 18 YALE J. INT'L L. 451, 469 (1993).

from the CMA.[49] The Ministry of Foreign Affairs (MFA) was, of course, tightly controlled by the top leadership, particularly in the aftermath of the Tiananmen incident when China was facing a hostile diplomatic environment. The State Council formally decided early in 1991 that MFA would lead the climate negotiations. [50] The State Planning Commission and the Ministry of Energy were the prototype central planning bureaucracy in the command economy.[51] They were exclusively focused on production and largely regarded the environment as irrelevant or an obstacle to their goals.

C. THE CLIMATE GROUP I

Despite the attempts for political control, international climate talks helped the environmentalists and climatic scientists in China. This was in part because governments in the West largely defined and understood climate change as an environmental issue. This helped those environmental engineers and climate scientists in the Chinese delegations since they could better understand the substances than the political

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[49] Economy, *supra* note 38, at 28 (discussing the positions of the Ministry of Energy and SPC); Lester Ross, *The Politics of Environmental Policy in the People's Republic of China*, 20 POL'Y STUD. J. 628, (1992) (noting the positions of the State Planning Commission and the Ministry of Finance in the debate on global warming); Michael T. Hatch, *Chinese Politics, Energy Policy, and the International Climate Change Negotiations*, *in* GLOBAL WARMING AND EAST ASIA: THE DOMESTIC AND INTERNATIONAL POLITICS OF CLIMATE CHANGE 49-50 (Paul G. Harris ed. 2003) (discussing different interests and policy preferences of the NEPA, SPC, Ministry of Energy, and Ministry of Foreign Affairs); HONGYUAN YU, GLOBAL WARMING AND CHINA'S ENVIRONMENTAL DIPLOMACY 61-62 (2008) (discussing the role of the Ministry of Foreign Affairs during early climate negotiations).

[50] Song Jian announced a decision of the State Council at the SC-EPC's special meeting on climate. *See* SONG JIAN TONGZHI ZAI GUO WU YUAN HUANGJINBAO HU WEIYUANHUI QIHUO ZHUANTI HUIYI SHANG DE JIANHUA [SONG JIAN'S SPEECH AT SC-EPC SPECIAL MEETING ON CLIMATE] (Jan. 15, 1991), *reprinted in* COLLECTED DOCUMENTS OF THE STATE COUNCIL ENVIRONMENTAL PROTECTION COMMISSION II, *supra* note 45, at 248-50 [hereinafter SONG JIAN 1991a]..

[51] On the State Planning Commission, see Wang Lixin & Joseph Fewsmith, *Bulwark of the Planned Economy: The Structure and Role of the State Planning Commission*, in DECISION-MAKING IN DENG'S CHINA: PERSPECTIVE FROM INSIDERS 51-65 (Carol Lee Hamrin & Suisheng Zhao eds., 1995). On the early energy regulatory agency in the Chinese bureaucracy, see Thomas Fingar, *Implementing Energy Policy: The Rise and Demise of the State Energy Commission*, in POLICY IMPLEMENTATION IN POST-MAO CHINA 190-224 (David M. Lampton ed., 1987). Early in the 1980s, when Kenneth G. Lieberthal and Michel Oksenberg, accomplished political scientists on China, studied Chinese bureaucracy, they used the ministries in the energy sector—coal, petroleum—and the State Planning Commission as primary examples. *See* KENNETH G. LIEBERTHAL & MICHEL OKSENBERG, POLICY MAKING IN CHINA: LEADERS, STRUCTURES, AND PROCESSES (1988); KENNETH G. LIEBERTHAL & MICHEL OKSENBERG, BUREAUCRATIC POLITICS AND CHINESE ENERGY DEVELOPMENT 36-43, 64-76 (1986).

appointees. This became a crucial advantage giving the environmentalists some control in identifying and framing issues in their memos and proposals when they came back home.[52] These memos and proposals addressed to the State Council became part of the framing process because they were written either in response to the strong opposition from the powerful industry ministries or with their opposition in mind.

One such memo was by the Chinese delegation to a London international conference on ozone layer in March 1989.[53] The delegation was impressed that China's experience in warm winters was quite consistent with the global phenomenon.[54] In its report to the State Council in China, the delegation concluded that climate change needed leadership from the State Council and the involvement of multiple departments, since the meteorological and environmental bureaus were not enough.[55] Thus, the delegation proposed that a planning group should be established.[56] Another delegation, which attended the UNEP's Fifteenth Meeting from May 15 to 26, 1989 in Nairobi, Kenya, made two proposals in China.[57] First, they proposed that because environmental issues had become major political issues in the world the SC-EPC should set up a coordinating group on international environmental issues.[58] Second, in order to change its "awkward position" (*beidong diwei*) in the international arena, the delegation suggested, China should improve air quality and make necessary changes to energy policy so that CO_2 would be reduced effectively.[59] These proposals led to the creation of the Coordinating Group on Climate Change (Climate Group I) under the SC-EPC in January 1990. Climate Group I was chaired by Song Jian.

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[52] These memos, proposals, and reports were collected and published by the SC-EPC in SC-EPC 1995, *supra* note 45.

[53] LUO JIBIN, GUANYU QUANQIUQIHUOBIAN NUAN WENTI DE HUIBAO [REPORT ON THE ISSUE OF GLOBAL WARMING] (Mar. 17, 1989), *reprinted in* SC-EPC 1995, *supra* note 45, at 64-65 [hereinafter LUO JIBIN 1989].

[54] *Id.* at 61.

[55] *Id.* at 64.

[56] *Id.*

[57] CHINESE DELEGATION TO THE U.N. ENV'T PROG., GUANYU CANJIA LIANHEGUOHUANJING GUIHUASHU DISHIWU JIE LISHIHUI DE QINGKUANG BAOGAO [REPORT ON THE 15TH SESSION OF THE UNITED NATIONS ENVIRONMENT PROGRAM GOVERNING COUNCIL MEETING] (July 5, 1989), *reprinted in* SC-EPC 1995, *supra* note 45, at 134-35 [hereinafter SC-EPC 1989c].

[58] *Id.* at 134.

[59] *Id.*

From October 29 to November 7, 1990, another Chinese delegation was dispatched to attend the Second World Climate Conference in Geneva.[60] In public, the delegation, led by Song Jian, expressed some skepticism on whether global warming was caused by human activities (most likely, under political instruction). In its report to the State Council, however, the delegation made four proposals, all arguing that China should play a more active role on climate change issues. First, the delegation reiterated that climate change was a serious issue and thus must be handled seriously.[61] The memo stated that, "since we are the third largest country in terms of energy consumption and our emission is high, and both energy consumption and emission are growing rapidly, . . . we are getting a lot of attention."[62] Second, the delegation noted that China still lacked the scientific data on climate change issues and suggested that State Planning Commission and the State Science and Technology Commission allocate more funds to support research and monitoring equipment.[63] Third, it called for more efforts dedicated to the preparation for the climate change negotiations at Rio de Janeiro.[64] Fourth, the delegation proposed policy changes to promote more efficient use of energy and clean energy, so as to reduce emissions. It reiterated that "since our per capita energy consumption and emission are still low, the international community cannot blame us. But once we have signed the climate change treaty, the general trend would still be to reduce emission, sooner or later."[65]

In January 1991, the SC-EPC convened a meeting on climate change.[66] The meeting was to hear reports of the Geneva Second World Climate Conference, a report by the CMA on warmer winters in China, and to begin planning for the upcoming UNFCCC negotiations. CMA's report confirmed that between 1980 and 1989, winter in northern China

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[60] CHINESE DELEGATION TO THE SECOND WORLD CLIMATE CHANGE CONF., CHUXI DIERCI SHIJIE QIHOU DAHUI DE BAOGAO [REPORT ON THE SECOND WORLD CLIMATE CHANGE CONFERENCE] (Dec. 30, 1990), *reprinted in* SC-EPC 1995, *supra* note 45, at 250-56 [hereinafter SC-EPC 1990b].

[61] *Id.* at 254-55.

[62] *Id.* at 255.

[63] *Id.*

[64] *Id.*

[65] *Id.* at 255-56.

[66] GUO WU YUAN HUANJINGBAOHU WEIYUANHUI QIHUO ZHUANTI HUIYI JIYAO [MINUTES OF SP-EPC'S MEETING ON CLIMATE] (JAN. 15, 1991), *reprinted in* SC-EPC 1995, *supra* note 45, at 246-48 [hereinafter SC-EPC 1991b].

was "clearly" getting warmer, average temperatures in northern China during the 1980s was 0.3-1.0°C higher than it was in the 1950s.[67] In his address,[68] Song Jian highlighted this finding and suggested that more funds should be allocated to climate research. He said, "We feel awkward when attending international conferences with no data in hand."[69] Song Jian also instructed the Ministry of Agriculture to do research on the impacts of climate change on agriculture and the State Bureau of Oceans to estimate the impacts of higher sea levels.[70] Taking this opportunity, Song Jian suggested that, "when we run into significant questions on science in negotiations, we should invite our scientists to speak their opinions. They will make a great contribution."[71] In this process, the SC-EPC and NEPA gradually reinforced themselves by bringing in more members of the scientific community. When preparatory work for the Rio de Janeiro Conference started in September 1990, the Climate Group I invited a large number of scientists and engineers to act as advisors on technical issues.[72] One year later, Song Jian made two suggestions at a SC-EPC meeting to further strengthen the influence of the scientific community.[73] One was to set up a Scientific Advisory Group under the SC-EPC, making the channel between the Climate Group I and the scientific community official. The Scientific Advisory Group was officially formed in August 1991. The second proposal was to set up a high-level advisory group on broader policy issues, the China Council for International Co-operation on Environment and Development (CCICED, or the International Council), in order to facilitate communication between China and international organizations, foreign foundations, businesses, and experts.[74] With support from the

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[67] CHINA METEOROLOGICAL ADMIN., JIN SHINIAN LAI WOGUO BEIFANG DONGJI MINGXIAN BIANNUAN [NORTHERN CHINA IS GETTING WARMER WINTERS IN THE LAST TEN YEARS] (Jan. 11, 1991), *reprinted in* SC-EPC 1995, *supra* note 45, at 279-84 [hereinafter CMA 1991].

[68] SONG JIAN 1991a, *supra* note 50, at 248-50.

[69] *Id.* at 249.

[70] *Id.*

[71] *Id.* at 250.

[72] SONG JIAN TONGZHI ZAI GUOWUYUAN HUANJING BAOHU WEIYUANHUI DI ERSHI CI HUIYI SHANG DE JIANGHUA ZHAIYAO [SONG JIAN'S SPEECH AT THE 20TH SESSION OF THE SC-EPC] (Sept. 6, 1991), *reprinted in* SC-EPC 1995, *supra* note 45, at 285 [hereinafter SONG JIAN 1991b]; SC-EPC 1991a, *supra* note 50, at 256.

[73] SONG JIAN 1991b, *supra* note 72, at 285.

[74] The idea of CCICED first came up from delegates attending the "International Conference on the Integration of Economic Development & Environment in China" held in Beijing in October, 1990. In January 1992, Song Jian invited key members and worked out a specific plan for the

Canadian International Development Agency (CIDA),[75] the International Council officially started on April 22, 1992 in Beijing.

D. THE INTERNATIONAL COUNCIL

Initially, the International Council was composed of forty-three experts and publicists from China and abroad. Song Jian was elected the Chairman, and Qu Geping and Dr. Marcel Massé, President of CIDA, were elected as Vice-Chairmen.[76] NEPA was designated as the host institution for the International Council. It maintains a Council Secretariat, also at NEPA, for administrative functions. The first Secretary General was Mr. Xie Zhenhau, then Deputy Administrator of NEPA. There were twenty-four Chinese members; four were from the scientific community, the rest were all vice-ministerial level officials representing a variety of government agencies, including SPC, SSTC, CMA, and NEPA. The nineteen international members were from a mixture of international institutions such as UNESCO, the World Bank, nonprofit organizations, such as the Rockefeller Foundation, businesses such as Royal Dutch/Shell Group, current or former government officials, and international environmental NGOs such as the World Wide Fund for Nature. The mandate of the International Council was to "provide advice and assistance to the Chinese Government in the development of an integrated, coherent approach across the areas of environmental protection, economic and social development, science and technology and related areas."[77]

CCICED. Song Jian, Speech at the Inaugural Meeting of CCICED (Apr. 23, 1992), *available at* http://www.cciced.org/encciced/media/publication/PubProcessofAGM/1992AGM/lspeech92/200802/t20080202_145202.htm. (last visited Dec. 20, 2009).

[75] ZHU TAN, HUANBAO HE KECHIXUFAZHAN DE ZHONGGUO [ENVIRONMENTAL PROTECTION AND SUSTAINABLE DEVELOPMENT IN CHINA] 282-85 (2007) [hereinafter ZHU TAN 2007]; Jonathan Schwartz, *Canada's Role in Chinese Environmental Protection*, J. CANADIAN FOREIGN POL'Y, Winter 2003, at 133-37 (discussing CCICED project of CID and other environmental projects during the 1990s).

[76] China Council for Int'l Cooperation on Env't and Dev., The First Meeting of CCICED Phase One (meeting on Apr. 23, 1992), *available at* http://www.cciced.org/encciced/events/agm/AGMFirst/200801/t20080129_145022.htm; TWENTY YEARS OF ENVIRONMENT ADMINISTRATION IN CHINA, *supra* note 42, at 340 [hereinafter SEPA 1994a] (discussing the formation of the CCICED).

[77] CHINA COUNCIL FOR INT'L COOPERATION ON ENV'T AND DEV., GENERAL REPORT (Apr. 23, 1992).

As a high-level advisory group, the International Council had access to decision-makers that any think tank would envy. In 1992, when it was formed, the members held a two-hour meeting with Premier Li Peng, who discussed in great detail China's policy on a variety of issues, from the environment to energy. The initial plan was for the International Council to be in place for five years. Apparently the Chinese government developed a viable working relationship with it so that the parties all agreed that the Council would continue. The first five years became known as Phase I (1992-97), but it has now been extended three times: Phase II (1997-2002), Phase III (2002-07) and Phase IV (2008-13). The International Council's regular channel of communication with the policymakers is its annual general meeting (AGM) where it adopts formal written recommendations. Recommendations are deliberated during its AGMs based on information from its Task Forces and Expert Working Groups covering a wide variety of issues including pollution control, environmental economics, energy strategy, scientific research, trade and sustainable development, and biodiversity.

From the configuration of its membership, the International Council seems as much an environmental advisory body as an energy advisory group. Nevertheless, it was probably behind some of the vital decisions that tend to contribute to the framing of climate change as an environmental issue. First, immediately after the Rio Conference, China was among the first to develop the Agenda 21 action plan to implement the principles of the Earth Summit.[78] Second, the International Council pushed for China to embrace the climate change negotiations which eventually led to the Kyoto Protocol. In 1993, the Council already recommended that, "China should play an active role in international efforts to cope with global environmental problems. For example, China should make efforts to reduce atmospheric carbon emissions which are

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[78] In July 1992, the SC-EPC, with the support from the UNDP, organized more than 300 experts from more than 50 ministries under the State Council to work on a large-scale project called, *China's Agenda 21*, which was eventually finished in 1994. CHINA'S AGENDA 21: WHITE PAPER ON CHINA'S POPULATION, ENVIRONMENT, AND DEVELOPMENT IN 21ST CENTURY CHINA (English ed. 1994), *available at* http://www.acca21.org.cn/ca21pa.html. The project was a comprehensive discussion of economy, society, energy and environment issues from the vantage point of sustainable development. *Id.* at 208-10 (discussing greenhouse gas emissions). *See also* ST. COUNCIL ENV'T PROT. COMM'N, 1992 NIAN QUANGUO HUANJINGBAOHU GONGZUO ZONGJIE [REVIEW OF ENVIRONMENTAL PROTECTION WORK IN THE YEAR OF 1992] (Apr. 7, 2003), *reprinted in* SC-EPC 1995, *supra* note 45, at 614.

related to international efforts." [79] In 1996, it again called for the development of a national plan for coping with such global problems as climate change. [80] Prior to the Kyoto Conference, the Council recommended "full Chinese participation in the negotiation of a package."[81] Third, the International Council supported strengthening the government agency in charge of environmental protection. In 1995, it recommended that "NEPA must be given sufficient power to be able to enforce its legislation, and of course it must have corresponding resources."[82] It linked this to the international UNFCCC, "This is all the more important if China is to observe its obligations under international treaties such as the Convention on Climate Change."[83]

E. CLIMATE CHANGE AS ENVIRONMENT: THE LIMITS

However, despite the efforts from the elite environmentalists during the period from 1989 to 1998, success was very limited. The greatest achievement was conceptual, introducing the notion of total emission control in the Climate Change Convention and the Kyoto Protocol and translating it into domestic environmental law. Previously, China's pollution control had been based on concentration of pollutants, not total emission control, like the cap in the FCCC and the Kyoto Protocol. However, total emission control was introduced into the newly amended Water Pollution Prevention and Control Act of 1996,[84] which allowed provincial governments to control the total discharge of major

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[79] China Council for Int'l Cooperation on Env't and Dev., Recommendations to the Chinese Government (May 5, 1993), http://www.cciced.net/encciced/media/PubPolicyRecom/200909/t20090909_160407.htm (last visited Sept. 25, 2009).

[80] China Council for Int'l Cooperation on Env't and Dev., Recommendations to the Chinese Government (Sept. 26, 1996), http://www.cciced.net/encciced/media/PubPolicyRecom/200909/t20090909_160410.htm (last visited Sept. 25, 2009).

[81] China Council for Int'l Cooperation on Env't and Dev., Recommendations to the Chinese Government (Oct. 5, 1997), http://www.cciced.net/encciced/media/PubPolicyRecom/200909/t20090909_160411.htm (last visited Sept. 25, 2009).

[82] China Council for Int'l Cooperation on Env't and Dev., Recommendations to the Chinese Government (1995), http://www.vancouver.sfu.ca/dlam/recommendations/1995.html (last visited Sept. 23, 2009).

[83] *Id.*

[84] First enacted on May 11, 1984, amended 1996. *Law of the P.R.C. on Prevention and Control of Water Pollution (1996)*, CHINESE L. & GOV'T, May-June 2004, at 88, 88-100.

pollutants. In June 1996, the State Council's Information Office published a white paper on environmental protection,[85] where it was declared, as a "strategic move," that pollution control be changed from focusing on concentration control of specific pollutants to a combination of concentration and "total quantity control."[86] In August, the State Council issued a "Decision on Several Issues in Environment Protection,"[87] where the term "total emission control" was put at the center of the overall rethinking of pollution control in China. Total emission control was also written into the Air Pollution Prevention and Control Act (APPCA) of 2000.[88]

In terms of governance, the environmentalists in NEPA and the national legislature, the National People's Congress, consciously pushed for a series of legislation on the environment. In the process, there were some signs of progress. For example, the amendment processes of APPCA in 1995 and 2000 showed the more active and independent role that the national legislature played.[89] Western observers were initially excited by the rise of the National People's Congress,[90] but that rise turned out to be very limited.[91] There was also expectation of the rise of the judiciary, but the judiciary remained weak and marginal in the

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[85] INFO. OFFICE OF THE STATE COUNCIL OF THE P.R.C., ENVIRONMENTAL PROTECTION IN CHINA 12-13 (June 1996), *English translation available at* http://www.china.org.cn/e-white/environment/index.htm.

[86] *See id.*

[87] ST. COUNCIL, GUOWUYUAN GUANYU HUANJING BAOHU RUOGAN WENTI DE JUEDING [DECISION ON SEVERAL ISSUES IN ENVIRONMENT PROTECTION] (Aug. 3, 1996), *available at* http://www.chinabaike.com/law/zy/xz/gwy/1333196.html [hereinafter ST. COUNCIL 1996].

[88] *Law of the P.R.C. on Prevention and Control of Atmospheric Pollution (1996)*, CHINESE L. & GOV'T, May-June 2004, at 24, 24-38 (describing Air Pollution Prevention and Control Act, passed by Ninth NPC Standing Committee on Apr. 29, 2000, full-text of English translation).

[89] *See* William P. Alford & Benjamin L. Liebman, *Clean Air, Clear Processes? The Struggle over Air Pollution Law in the P.R.C.*, 52 HASTINGS L. J. 703, 736 (2001).

[90] *See* MURRAY SCOT TANNER, THE POLITICS OF LAWMAKING IN POST-MAO CHINA: INSTITUTIONS, PROCESSES, AND DEMOCRATIC PROSPECTS (1999); *see also* Murray Scot Tanner, *The Erosion of Central Party Control over Lawmaking*, 138 CHINA Q. 381, 388 (1994); Michael William Dowdle, *Constructing Citizenship: The NPC as Catalyst for Political Participation*, *in* CHANGING MEANINGS OF CITIZENSHIP IN MODERN CHINA 330-49 (Merle Goldman & Elizabeth J. Perry eds., 2002).

[91] William P. Alford and Benjamin L. Liebman noted, "although the NPC is maturing as a legislative body, it continues to operate on a playing field that remains in significant respects pre-set by the Party. Responsiveness to certain concerns from elite circles, though arguably laudable, is not necessarily equivalent to democratization." Alford & Liebman, *supra* note 89, at 748.

1990s.[92] More fundamentally, there was still a great mismatch between law as inspirational statement of norms and the complex economic and social structure that law had little power to shape.[93] NEPA as the national environment agency was in no better shape. With its meager budget,[94] SEPA was overwhelmed by its work on other more pressing issues such as acid rain (caused by sulfur dioxide) and water pollution in major lakes and river basins. Things got worse in 1998 when Premier Zhu Rongji reorganized the government. NEPA was elevated to ministry level to become the State Environmental Protection Administration (SEPA), but its staff was not expanded accordingly.[95]

III. THE "ENERGY TURN"

After 2003, however, climate change was conceptualized as an energy policy issue. Some Chinese officials divide China's participation in international climate diplomacy into three stages: (a) negotiation of the Climate Change Convention, from 1990 to 1992; (b) negotiation of the Kyoto Protocol, from 1992 to 1997; and (c) the post-Kyoto period, from late 1997 to the present.[96] This periodization closely follows the development of international negotiations. The Kyoto Protocol negotiations concluded in December 1997, but China did not ratify it until September 2002. This period would obscure two events in the development of climate policy in China that occurred during this period

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[92] ECONOMY, *supra* note 23, at 101. For the judiciary in general, see Donald C. Clarke, *Power and Politics in the Chinese Court System: The Enforcement of Civil Judgments*, 10 COLUM. J. ASIAN L. 1, 23-4, 60 (1996); Donald C. Clarke, *The Execution of Civil Judgments in China*, 141 CHINA Q. 65, 73 (1995); Benjamin L. Liebman, *Note: Class Action Litigation in China*, 111 HARV. L. REV. 1523 (1997). This is still true today. *See* Benjamin L. Liebman, *China's Courts: Restricted Reform*, 191 CHINA Q. 620, 621-22 (2007).

[93] William P. Alford & Yuanyuan Shen, *Limits of the Law in Addressing China's Environmental Dilemma*, 16 STAN. ENVTL. L. J. 125, 127 (1997).

[94] China does not want to put forth many resources to solve their environmental problems. *See generally* Elizabeth Economy, *China's Environmental Diplomacy*, *in* CHINA AND THE WORLD: CHINESE FOREIGN POLICY FACES THE NEW MILLENNIUM 264, 264, 281 (Samuel S. Kim ed., 1998).

[95] ECONOMY, *supra* note 23, at 106-07. Elizabeth Economy also noted that during the 1990s, the State Development and Planning Commission (SDPC) wanted to expand its power to environment-related activities. One example is that the SDPC became one of the two "chief conduits for the international funds that flowed into China for Agenda 21" projects, despite the fact that the United Nations Development Program wanted NEPA's involvement. *Id.* at 107.

[96] Paul G. Harris & Hongyuan Yu, *Environmental Change and Asia-Pacific: China Responds to Global Warming*, 17 GLOBAL CHANGE, PEACE & SECURITY 45, 52 (2005).

of time: one is bureaucratic change—the lead agency in charge of climate was shifted to NDRC (which was also responsible for energy policy) in 1998, when Premier Zhu Rongji reorganized the government. The other occurred early in 2003. Development Research Center of the State Council—the top think tank within the establishment—started working on a new energy strategy that proved to set the theoretical foundation for the subsequent years. These two events suggest the beginning of China's reconceptualization of climate change.

A. NDRC IN CONTROL

In 1998, Song Jian left the Climate Group I. Premier Zhu Rongji's decided to dismantle Climate Group I and establish a new group called State Coordinate Group on Responses to Climate Change ("Climate Group II"). The new entity was led by Zeng Peiyan, then Vice Premier and Chief Commissioner of the State Development and Planning Commission (SDPC, successor to the State Planning Commission). Climate Group II's office was relocated from the China Meteorological Administration to the newly formed SDPC.[97] This is significant as the office functioned as the secretariat, in practice the office carries a lot of responsibility for climate work in China.[98] In October 2003, when the Hu Jintao-Wen Jiabao administration took power, Climate Group II was chaired by Ma Kai, the newly appointed head of the National Development and Reform Commission (NDRC, successor to the SDPC). In 2007, the State Small Leadership Group on Climate Change, Energy Conservation and Emission Reduction (Climate Group III) was formed to replace Climate Group II, and its office was set in NDRC. Climate Group III is a high-level policy deliberation and decision-making body chaired by Premier Wen Jiabao, composed of mostly ministers from different departments. Ma Kai, the head of NDRC, was appointed as Office Director. In terms of bureaucratic structure, 1998 saw a significant change in China's conceptualization of climate change. Since 1998, the Climate Groups II and III were both heavily influenced by NDRC.

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[97] Gørild Heggelund noted, "With the climate change focus turning increasingly toward economic impact, the influence of the [China Meteorological Administration] has diminished." Gørild Heggelund, *China's Climate Change Policy: Domestic and International Developments*, ASIAN PERSP., June 2007, at 169.

[98] *Id.* at 171.

As noted earlier, during the U.N. Climate Change Convention negotiations, the State Planning Commission was not enthusiastic about climate change.[99] The reformed NDRC is now in charge of energy policy (through its National Energy Administration), and it still closely works with the Ministry of Foreign Affairs. But the energy situation was changing dramatically for China after 1998. China has a long standing concern for dependence on foreign oil, given its experiences in the 1960s.[100] Internal debates on energy security started as soon as China became a net oil importer in 1993.[101] Concerns about energy were lessened temporarily by the Asian Financial Crisis in 1997-98, when the main policy focus was stimulating the economy. The debate on energy security intensified again in 2003 when China became the world's second largest consumer of oil, the United States being the first. In the volatile market of the 2000s, dependence on imported oil means vulnerability in national security and domestic stability.[102] Power outages in 2004 in major cities across China also added to the sense of crisis.[103] Politically, it was also the right time to think about the long term. In November 2002, Hu Jintao succeeded Jiang Zemin to become the Party's Secretary-General, and in March 2003, Hu was to become China's President at the National People's Congress. As Hu Jintao and Wen Jiabao prepared for the leadership transition, it was natural to rethink the energy policy for the nation

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[99] YU, *supra* note 49.

[100] China developed its oil industry in the 1950s with the help of the Soviet Union. However, in 1960, when Soviet-China relationship deteriorated, the Soviet Union withdrew its experts, and stopped oil supply to China, causing a great deal of anxiety in the energy sector until 1963, when China's own oil output largely met the domestic demand. KIM WOODARD, THE INTERNATIONAL ENERGY RELATION OF CHINA 50-55 (1980).

[101] ERICA STRECKER DOWNS, RAND, CHINA'S QUEST FOR ENERGY SECURITY 12 (2000).

[102] Erica S. Downs, *The Chinese Energy Security Debate*, 177 CHINA Q. 21, 22, 31 (2004); Charles E. Ziegler, *The Energy Factor in China's Foreign Policy*, 11 J. CHINESE POL. SCI. 1, 2, 4 (2006); Mary E. Gallagher, *China in 2004: Stability above All*, 45 ASIAN SURV. 21, 26 (2005).

[103] Power outage in 2004 was also assessed through the lens of political stability and security. *See* Jianhua Feng, *Energy Crisis?*, BEIJING REV., Jan. 15, 2004, at 28; Ren Fan, *Finding Fuel*, BEIJING REV., June 3, 2004, at 38; Elspeth Thomson, *Power Shortages in China: Why?*, 3 CHINA: INT'L J. 155, 168 (2005).

TABLE 1: TIMELINE IN CHINA'S RECONCEPTUALIZATION OF CLIMATE CHANGE

Year	Title	Chairs
1974	State Council Environmental Protection Small Leadership Group	
1984	State Council Environmental Protection Commission	Chair: Li Peng
1990	State Council Environmental Protection Commission, Climate Change Leadership Group (Climate Group I)	Chair: Song Jian
1998	State Coordinate Group on Responses to Climate Change (Climate Group II)	Chair: Vice Premier Zeng Peiyan, head of SDPC
2003		Chair: Ma Kai, head of NDRC
2007	State Small Leadership Group on Climate Change, Energy Conservation and Emission Reduction (Climate Group III)	Chair: Premier Wen Jiabao. Vice Chair: Vice Premier Zeng Peiyan; State Councilor Tang Jiaxuan Office Director: Ma Kai, head of NDRC.

B. RETHINKING CHINA'S ENERGY STRATEGY

Early in 2003, the Development Research Center of the State Council, a top establishment think tank, along with the NDRC, Chinese Academy of Science, etc., led a large-scale study on China's energy policy. The study covered a wide range of topics from energy demand and supply, oil security, conservation, environment, climate change, clean coal technology, renewable energy, to research and development (R&D) in the energy sector. The final product of the study, "Strategy and Policy for China's Energy" (Strategy) was the keynote speech and center of discussion at a high-level international workshop in November 2003 in Beijing.[104] The Strategy set the intellectual foundation of China's subsequent energy policies of the 2000s.

[104] The report was published as Chen Qingtai, et al., *Guojia nengyuan zhanlue de jiben guoxiang [Strategy and Policy for China's Energy]*, Nov. 16, 2003, *available at*

The Strategy first reviewed energy during the 1980-2000 period.[105] It noted that China's GDP grew at an annual rate of 9.7 percent, while energy only grew at 4.6 percent, less than half of the economic growth. Energy intensity—measured by the energy consumption for each unit of GDP—went down by 64 percent. This is an enormous achievement considering the world average went down by only 19 percent, and that of the Organization for Economic Co-operation and Development (OECD) countries went down 20 percent during the same period. The Strategy attributed the success to three elements. First, the change in industrial structure—the proportion of metallurgy industries decreased while that of light industries such as electronics and communication increased. Second, as result of the reform, the market forces started playing an important role in allocating resources and eliminating some of the energy- and raw material-consuming firms.[106]

However, this trend of energy intensity going down would not continue, the Strategy projected. [107] This is because the industrial structure would change again in the next twenty years. As living standards go up and consumption patterns change over time, demand for energy would change, especially in the areas of transportation and construction, which would grow faster than the overall economy. China

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http://www.people.com.cn/GB/jingji/1045/2191153.html [hereinafter Strategy]. On the international workshop, see *Zhongguo fazhan gaoceng luntan nengyuan zhanlue he gaige guoji yantoahui zai jing juxing [Energy Strategy and Reform: China's Energy Strategy Gets Attention from the World]*, CHINA ECON. TIMES, Nov. 17, 2003, http://business.sohu.com/2003/11/17/52/article215675207.shtml.

[105] Strategy, *supra* note 104, at Part I.

[106] *Id.* This is in line with an earlier study by a research project at the Massachusetts Institute of Technology which concluded that decrease in energy intensity in 1980s was the result of production-technology change in China. *See* XIANNUAN LIN, CHINA'S ENERGY STRATEGY: ECONOMIC STRUCTURE, TECHNOLOGICAL CHOICES, AND ENERGY CONSUMPTION (1996); Karen R. Polenske & Xiannuan Lin, *Conserving Energy to Reduce Carbon Dioxide Emissions in China*, 4 STRUCTURAL CHANGE & ECON. DYNAMICS 249 (1993); Xiannuan Lin, *Declining Energy Intensity in China's Industrial Sector*, 16 J. ENERGY & DEV. 195 (1991); Xiannuan James Lin & Karen R. Polenske, *Energy Use and Air-Pollution Impacts of China's Transportation Growth, in* ENERGIZING CHINA: RECONCILING ENVIRONMENTAL PROTECTION AND ECONOMIC GROWTH 201-38 (1998). Michael B. McElroy, who chaired an environment project at Harvard, and U.S. *Energy Association* Chairman Daniel Yergin came to the workshop. *See* Li Hui-lian, *Energy Strategy a Significant Issue in Current Situation*, CHINA ECON. TIMES, Nov. 7, 2003, http://news.sohu.com/13/08/news215310813.shtml (an interview with Lu Mai, Secretary General of China Development Foundation, sponsor of the workshop). *See* Michael B. McElroy & Chris P. Nielsen, *Energy, Agriculture, and the Environment: Prospects for Sino-American Cooperation*, in LIVING WITH CHINA: U.S./CHINA RELATIONS IN THE TWENTY-FIRST CENTURY (1997).

[107] Strategy, *supra* note 104 at Part II.

is facing a tension here, asserted the Strategy. On the one hand, it is heavily dependent on fossil fuel (coal and oil), and on the other, its energy efficiency remained considerably lower than that of the world average. This creates two major concerns. One is carbon dioxide emission. China's emission of carbon dioxide increased from 394 million tons in 1980 to 832 million tons in 2001. By 2020, emissions will be even higher, "thus China would be facing increasingly more international pressure to reduce greenhouse gas emission." [108] The other concern, the Strategy noted, is energy security. By 2020, almost 60 percent of oil would have to be imported from abroad, which would leave China in an extremely vulnerable position. Therefore, the Strategy reasoned, it is crucial that China adopt a long-term energy strategy aiming at a transformation in terms of development direction and development pattern.[109]

At the core of a sustainable energy strategy are three elements: priority on conservation and efficiency, multiple sources, and environment-friendliness.[110] On conservation and efficiency, the Strategy set the goal that by the year 2020 China's total energy consumption goes down by 15 to 27 percent. The Strategy reiterated that as the top priority in the new energy strategy, conservation and efficiency should be given higher priority than increasing energy supply.[111] On multiple sources, the Strategy recommended that China should increase the use of natural gas and actively develop renewable energy such as hydraulic power and nuclear power. The Strategy recommended the target capacity for nuclear to be 40 gigawatts (GWs), small-scale hydraulic power to be 70 GWs, wind power to be 20 GWs, and biomass to be 10 GWs.[112] On the environment, the Strategy recommended that, "environment should be considered as an inherent element in decision-making on energy strategy."[113] In other words, the Strategy conveyed the message that the environment is not an externality and should not be treated as one. It projected that by 2020 China's emission of carbon dioxide would be between 1.3 to 2 billion tons, reaching a per capita emission between 0.9 to 1.3 tons. Given the amount of emission, the Strategy speculated that

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[108] *Id.*
[109] *Id.*
[110] *Id.*
[111] *Id.*
[112] *Id.*
[113] *Id.*

there would be no doubt that "China would be forced to commit a cap as soon as the United States accedes into the Kyoto Protocol." [114] At the end of the day, "it would be really hard for China to avoid any cap on greenhouse gases after 2020."[115]

C. THE NATIONAL PROGRAM ON CLIMATE CHANGE

The ideas laid out in the Strategy gradually found their way into official policy. In December 2004, the Communist Party took up the energy conservation and efficiency principle in its landmark Central Economic Work Conference. [116] Then the energy strategy was further formulated and became part of the "Eleventh Five-Year Plan" approved by the National People's Congress in March 2006.[117] The new energy strategy eventually became the foundation of the "National Climate Change Program," (the Program) announced by NDRC in June 2007.[118] As the nation's second general official statement on climate change, the Program embodies the way NDRC defined climate change as an energy policy, an enormous change from the first period 1989-1998, discussed earlier.

The Program covered a broad range of issues. It described endeavors China had taken (Chapter I), the challenges China is still facing (Chapter II), its policy principles and objectives (Chapter III), measures and policies China is prepared to apply (Chapter IV), and its basic positions on climate change in the international arena (Chapter V). Though it covers industrial processes, agriculture, forestry, urban waste, etc. as key areas for emission mitigation, the Program largely defined China's climate policy through the lens of energy—energy efficiency, conservation, technology, and renewable status. The main targets the

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[114] *Id.*

[115] *Id.*

[116] *Central Economic Conference Convened in Beijing*, PEOPLE'S DAILY, Dec. 6, 2004, http://english.peopledaily.com.cn/zhuanti/Zhuanti_436.html.

[117] Zhongua Renmin Gongheguo guomin jingji he shehui fazhan dishiyi ge wu nian guihua gangyao quanwen [The Eleventh Five-Year Plan for the Development of National Economy and Society] (passed by the Nat'l People's Cong., Mar. 16, 2006), *available at* http://news.xinhuanet.com/misc/2006-03/16/content_4309517_1.htm. C. Cindy Fan, *China's Eleventh Five-Year Plan (2006-2010: From "Getting Rich First" to "Common Prosperity,"* 47 EURASIAN GEOGRAPHY & ECON. 708 (2006).

[118] NAT'L DEV. & REFORM COMM'N, CHINA'S NATIONAL CLIMATE CHANGE PROGRAM (2007), *available at* http://www.china.org.cn/english/environment/213624.htm [hereinafter NATIONAL CLIMATE CHANGE PROGRAM].

Program sets are *energy* targets that: (a) China will reduce energy consumption per unit of output value in GDP by 20%, and (b) China will raise the proportion of renewable energy to 10 percent of its primary energy supply by 2010.[119] This is in part because China does not want to set a cap for its carbon emissions, even in this purely domestic context.[120] More fundamentally, the central theme of the Program, based on the new energy strategy, is not just to cut emissions, but to change China's economic growth pattern by improving energy conservation and efficiency. In other words, the Program saw a strategic value in energy conservation and efficiency as a means to fuel economic growth by upgrading the whole economic structure.[121]

D. CLIMATE CHANGE AS ENERGY: CHALLENGES

The differences between climate change understood as energy policy and climate change understood as environmental policy lie in the specific context of the Chinese policymaking process. There are differences in both governance and investment. In terms of governance, NDRC preferred certain policy instruments to others based on its own experience, tradition, and jurisdiction. The National Program on Climate Change is more in favor of a "command and control" approach—it sets standards, rules, targets, and timetables, but remains ambiguous on market incentive-based measures. SEPA, or its successor, the Ministry of Environment Protection (MEP), was interested in "cap-and-trade" and has conducted pilot projects on sulfur dioxide and chemical oxygen demand (COD),[122] but "cap-and-trade" was not even mentioned in the Program. SEPA was also interested in a carbon tax.[123] The Program is

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[119] *Id.* at Part III.

[120] *See* Jim Yardley & Andrew C. Revkin, *China Issues Plan on Global Warming, Rejecting Mandatory Caps on Greenhouse Gases*, N.Y. TIMES, June 5, 2007, at A12.

[121] *New Energy Seen as New Growth Engine*, CHINA DAILY, June 2, 2009, at 1.

[122] *See generally* Richard D. Morgenstern et al., *Emissions Trading to Improve Air Quality in an Industrial City in the People's Republic of China*, *in* CHINA'S ENVIRONMENT AND THE CHALLENGE OF SUSTAINABLE DEVELOPMENT 150 (Kristen A. Day ed., 2005) (discussing the pilot project at Taiyua capital city of Shanxi province, central China).

[123] For example, Pan Yue, the Deputy Minister of SEPA, was enthusiastic about a "green taxation" regime. Pan Yue, *Economic Policies Can Control Polluters*, CHINA DAILY, Sept. 19, 2007, at 10; Pan Yue & Ma Li, *Changing the Rules of the Game*, CHINA DIALOGUE, Sept. 14, 2007, *available at* http://www.chinadialogue.net/article/show/single/en/1321. The World Bank also made similar suggestions. *See* WORLD BANK, CLEAR WATER, BLUE SKIES: CHINA'S ENVIRONMENT IN THE NEW CENTURY (1997). The World Bank noted, "[t]he case for levying a pollution tax on coal is

silent on carbon tax as well. NDRC, however, has recently made it clear that it opposes the idea.[124] Climate change as environment would prefer a measure that can be applied across a broad range of industries and economic sectors, as a carbon tax or cap-and-trade suggest, but climate change as energy would not tolerate that because they may hurt NDRC itself. Thus climate change as energy's biggest problem is conflict of interests.

However, there are some positive elements in China's new policy. In recent years, NDRC has been aggressively investing in cleaner technology to reduce emissions. In the power generation sector, as a result, bigger (typically with capacity of 600 MW) and more efficient power generators employing supercritical (SC) or ultra-supercritical (USC) technology are replacing the smaller and old power generators.[125] A report published in April 2009 by the International Energy Agency suggests that about ninety-five SC or USC units with a capacity of 600 MW or more had been put into operation by mid-2007, with another seventy units under construction, scheduled to be operational before 2010.[126] Another area is renewable energy. A recent example is that a 10 GW wind farm in Jiuquan, Gansu province, northwest China, has just

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strong. About two-thirds of China's coal is consumed in the non-power sectors, with a massive number of small users. Enforcing emissions control among these users is an impossible task for regulatory agencies." *Id.* at 53.

[124] Han Wenke, Director of the Energy Institute of the NDRC, stated in an interview on June 24, 2009, with *China Economic Weekly*, a media outlet owned by the People's Daily, that China has no timetable for adopting a carbon tax. Zhonguo kaizheng tanshui wu shijianbiao [China Has No Timetable for Adopting A Carbon Tax], CHINA ECON. WEEKLY, June 24, 2009 (P.R.C.), *available at* http://paper.people.com.cn/zgjjzk/html/2009-06/29/content_285472.htm; Zhang Jianping, *Carbon Tax's Smoke and Mirrors*, CHINA DAILY, Aug. 24, 2009, at 4 (arguing that carbon tax being contemplated by the United States in its Clean Energy and Security Act as an act of provocation that will spur a trade war, and imposing undue onus on developing countries) (the author is also affiliated with NDRC).

[125] SC stands for supercritical technology and USC stands for ultra-supercritical technology. A report published in April 2009 by the International Energy Agency suggests that among new power generation projects, 600 MW units now dominate, and about 60% of the new-builds in China are supercritical units. INT'L ENERGY AGENCY, CLEANER COAL IN CHINA 101 (2009); Keith Bradsher, *China Outpaces U.S. in Cleaner Coal-Fired Plants*, N.Y. TIMES, May 11, 2009, at A1 (suggesting that some of the new thermal power plants built in China can achieve an efficiency of 44 percent, while the most efficient plants in the United States achieve around 40 percent efficiency).

[126] INT'L ENERGY AGENCY, *supra* note 125, at 101. However, the IEA report notes, the share in total coal-fired generation capacity of all types of supercritical plants is about 12%. In comparison, the IEA report notes, the share of supercritical units in coal-fired generation capacity is about 70% in Japan and 30% in the United States. *Id.*

started construction.[127] The Global Wind Energy Council, a Brussels-based institution, reported that in 2008, China again doubled its installed capacity by adding about 6.3 GW, to reach a total of 12.2 GW, making China the fourth in the world in terms of installed capacity.[128] The United States added the biggest capacity in the same year, surpassing Germany to become the number one market in wind power.[129] For China, this is the fourth consecutive year when its total capacity doubled every year. As a result of these investments 12.8 billion kilowatt-hour (kWh) of electricity came from wind power in 2008.[130]

These areas show some signs of what Giddens calls "economic convergence," meaning that environmentally sound policy often coincide with what is good for the economy and wider political goals.[131] China is contributing to the global move towards renewable energy. In the United States, wind power investment also has the benefit of "economic convergence." The wind industry added 35,000 jobs in 2008 resulting in a total of about 85,000 people employed in the wind industry today, up from 50,000 a year ago. [132] In 2008, combined with new large hydropower stations, renewable energy represented 41 percent of total new global capacity, making 2008 the first year that investment in new power generation capacity sourced from renewable energy technologies

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[127] Zhang Qi, *China's First of 7 Mega Wind Farms Ready to Start Rolling*, CHINA DAILY, July 7, 2009, at 13, *available at* http://www.chinadaily.com.cn/cndy/2009-07/07/content_8385497.htm.

[128] GLOBAL WIND ENERGY COUNCIL, GLOBAL WIND 2008 REPORT (2009). *See also* Xia Changliang & Song Zhanfeng, *Wind Energy in China: Current Scenario and Future Perspectives*, 13 RENEWABLE & SUSTAINABLE ENERGY REV. 1966 (2009).

[129] GLOBAL WIND ENERGY COUNCIL, *supra* note 128, at 3.

[130] ST. ELEC. REGULATORY COMM'N, DIANLI JUANGUAN NIANDU BAOGAO (2008) [ANNUAL REPORT (2008)] 12 (2008) (P.R.C.). In 2006, 83.17% came from thermal power, 14.70% came from hydraulic power, and 1.92% came from nuclear power. Wind power information for 2006 was not available. *Id.*

[131] *See* Anthony Giddens, *The Politics of Climate Change: National Responses to the Challenge of Global Warming*, POL'Y NETWORK PAPER, Sept. 2008, at 4, 12-15. This is one of the key arguments of the "ecological modernization" theory in which Giddens has been a key leader as a social theorist. *See, e.g.*, ANTHONY GIDDENS, THE THIRD WAY: THE RENEWAL OF SOCIAL DEMOCRACY 57 (1998). *See generally* ENVIRONMENT AND GLOBAL MODERNITY (Gert Spaargaren, Arthur P.J. Mol & Frederick H. Buttel eds.) (2000); Karine Matthews & Matthew Paterson, *Boom or Bust? The Economic Engine behind the Drive for Climate Change Policy*, 17 GLOBAL CHANGE, PEACE & SECURITY 59 (2005).

[132] AMER. WIND ENERGY ASS'N, ANNUAL WIND INDUSTRY REPORT: YEAR ENDING 2008 17 (2009), *available at* http://www.awea.org/publications/Reports/AWEA-Annual-Wind-Report-2009.pdf.

(approximately $140 billion including large hydro) was more than the investment in fossil-fueled technologies (approximately $110 billion).[133]

IV. CONCLUSION

This essay presents a narrative of two perspectives of climate change in China. From 1989 to 1998, climate change was largely understood as an environmental issue, managed bureaucratically by a high-level inter-ministry group, the State Council's Environmental Protection Committee, where the environmental agency, SEPA, and the scientific community, represented by China Meteorological Administration, State Science and Technology Commission, played influential roles. From 1998 (bureaucratically), or 2003 (intellectually), to the present, climate change is redefined as an energy policy issue, managed by the powerful National Development and Reform Commission (NDRC), which is also in charge of the nation's energy policy. NDRC officials, instead of an environmental agency, lead Chinese climate delegations and speak for China in international conferences, negotiations, and seminars. Domestically, NDRC pushed for aggressive investment policies in renewable energy and other areas. This essay thus concludes that from 1989 to 2009, China re-conceptualized climate change.

The re-conceptualization of climate change occurred in a context in which China is trying to reposition itself in response to a series of crises as a consequence of climate change or related to it: energy security, food security, domestic stability, new frontiers in technology, and increasing international pressure, etc. This reframing of climate change is an integral component of a new developmental strategy developed by the top leadership during the same time period. Thus, climate change redefined in this context is part of the efforts to reframe national competitiveness in China. During the first period, when the environment was also declared a "basic national policy," it was not able to find a meaningful link between China's industrialization and the environment; during the second period, that link was found in the energy sector.

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[133] SUSTAINABLE ENERGY FIN. INST., U.N. ENV'T PROG., GLOBAL TRENDS IN SUSTAINABLE ENERGY INVESTMENT 2009 23 (2009).

No doubt that even in the energy sector China has a long way to go to make a more meaningful contribution to climate change. Renewable energy is still a tiny part of China's overall energy source, which is still dominated by coal. But China's new programs seem to be another example of nations' strategic behavior, just like India chose to invest in wind power early in the 1980s, or Japan and the Nordic countries switched to renewable energy or more efficient technologies after the 1970s oil crisis. Strategic decisions based on calculation of self-interest and perception of national competitive edge has long been a crucial driving force in the economic and scientific history of humankind. Yet, this basic element is largely missing in the Kyoto Protocol. Timetables and emission targets, which are often on the headlines in the media, produce bad politics because they are more often considered burdens, even though they might be politically desirable. However, national strategic interests that seek a competitive edge—a huge amount of renewable energy itself—are not harnessed by the current climate change talks. The alternative direction, on the agenda perhaps after Copenhagen, is to redesign the global climate regime so that a competition element can be built into it.

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