THE CHINESE COMMUNIST PARTY’S SENSITIVITY TO LEGITIMACY AND ITS RUSH FOR HYDROPOWER

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ABSTRACT

This paper seeks to explain why China suddenly sped up its hydropower development on trans-boundary rivers, despite neighboring countries and environmental activists’ opposition and the fact that it did not have any electricity shortage problem and it would not have this problem in the near future. The conventional understandings of China’s motivations for hydropower development, energy demand, economic benefit, and climate change, are not convincing explanations for China’s recent hydropower rush. Instead, by reading carefully government document and hydropower data, this paper advances that the Chinese Communist Party (the CCP)’s sensitivity to regime legitimacy is the primary factor that encourages the CCP to remove constraints on hydropower development accelerate its exploitation in response to the public desire for clean air.
The research and writing of this thesis is dedicated to Professor Cha, who shaped this research in a significant way; Ning Ding, Wafi Abdul Manan, and Mengjia Wan who provided me instructive advice and useful suggestions on my thesis; and my friends at the Asian Studies Program.

Many thanks,
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INTRODUCTION

China has been heavily criticized by environmental activists, experts, technocrats, and neighboring countries for selfish and excessive hydropower development. For this reason, China slowed down and even halted its hydropower exploitation on trans-boundary rivers in 2004. Until today, the development rate of China’s trans-boundary rivers is still far behind that of domestic rivers. However, since 2012, China has greatly sped up its hydropower development on its three major international rivers. The number of large hydropower projects on trans-boundary rivers that were approved and preapproved from 2012 to 2014 reached a total of 12—more projects than the sum of the last three decades. What is more interesting is that at the same time, China’s demand for electricity began to slow down and China gradually entered an era of surplus electricity. Why does China suddenly launch such a large-scale hydropower development when there is no clear reason for doing so?

This paper aims to solve this puzzle by proposing the CCP’s sensitivity to regime legitimacy (hereinafter referred to as “legitimacy sensitivity”). Facing rising social unrest and protests on air pollution, the legitimacy sensitivity led the CCP to respond to people’s demand as strong as possible. Furthermore, in order to give a powerful and unified voice to the public the CCP strengthen state monopoly on policy-making and launch large scale hydropower projects regardless of possible oppositions such as critiques from environmental activists and neighboring countries. This paper argues that air quality problems and the public’s concern are just triggers of China’s ambitious hydropower development. Legitimacy sensitivity is the real motivation for the

1 Lei Yun; 雷云. 跨国社会运动与中国公共政策议程设置模式变革--以“怒江水电开发事件”为例. (Transnational social movements and the revolution of China’s public policy agenda-setting: Nu River hydropower development as case study) 理论界. April 22, 2013
2 Data from the “China Hydropower Stations” database, the author
CCP to go beyond just passively responding to public demand and issuing a grand clean energy plan to restore its image as a responsive and effective government.

This paper begins by reviewing China’s hydropower policy and introducing a recent change. It then goes on to present alternatives that analyze China’s motivations for hydropower development, followed by an original argument on legitimacy sensitivity as a primary rationale for the acceleration of hydropower development on trans-boundary rivers. To support this argument, the paper presents a time congruence between the public’s discontent with air quality and hydropower development. Then, after demonstrating that the CCP’s air governance plan is more than a functional response, the “legitimacy sensitivity” is introduced as an intervening variable that connects the public’s discontent and China’s hydropower rush, and that completes the causal link between the independent variable and dependent variable.

THE PUZZLE

China’s hydropower development is often misread. For instance, Donald Weatherbee described China as a trickle-down hegemony, arguing that China was very selfish in hydropower development and didn’t care about neighboring countries’ concern and environmental cost at all. It is also misleading to argue that China has a constant hydropower strategy that is driven by its growing economy. This argument is over simplistic. China does not have a constant hydropower strategy, and the main factors that guided China’s hydropower policy have changed several times from early 1980s to present. Energy demand, environment issue, and neighboring countries’

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4 Pichamon Yeophantong and Scott W.D. Pearse-Smith argue that China’s hydropower exploitation is driven by economic development. Richard Cronin argues that hydropower projects are proposed for the reason of promoting economic growth of local area.
opposition are the three factors influencing China’s hydropower policy. However, since 2012, when these factors were taken into consideration, there should have been a slowdown of hydropower development. But, in reality, the hydropower development was suddenly sped up.

Energy demand is an important concern that influences China’s hydropower policy, but it is not always the main determinant. China’s first round of hydropower exploitation was between 1985 and 1995, when the Chinese economy began to take off and the energy demand began to increase rapidly (see Graph 1: China’s Hydropower Plants on Major Rivers). The second round came in 2001 and ended in 2006 when China had a serious electricity shortage problem. Especially from 2003 to 2005, 24 of its 33 provinces had to issue electricity rations. From 1996 to 2000, and from 2006 to 2009, hydropower exploitation was relatively limited, even though energy demand had been growing steadily.

Environmental cost is also a crucial factor. It dominated China’s hydropower policy from 2006 to 2009. On April 23rd, 2006, premier Wen stated for the first time that “we should control irrational exploitation of resources.” In 2008, the former State Environmental Protection Administration was upgraded to the Ministry of Environmental Protection (MEP). This upgrade granted the MEP two new mandates: law enforcement and formal policy making, allowing it to play a larger role in environmental protection. Since then, the MEP has been an important opponent of hydropower exploitation for its potential ecological cost. For example, in March, 2015, the MEP required the Three Gorges Group to stop planning and constructing Xiaonanhai

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5 During the first round the enormous Three Gorges Dam was approved.
7 Wen Jiabao; Premier Wen Jiabao’s Speech on the Sixth National Conference on Environmental Protection; http://www.gov.cn/ldhd/2006-04/23/content_261716_2.htm
hydropower station, even though it was already listed on the “Twelfth Five Year Plan of Energy Development” (Referred to as 12th Energy Plan) by the State Council.\(^9\) The hydropower development data also shows this point. Between 2007 and 2009, China only approved one large hydropower station\(^10\), compared to eight from 2001 to 2006 (see Graph 1).

Neighboring countries’ opposition is another concern. We can see this from approval procedures and development rates for hydropower stations on rivers that extend beyond China’s border. The State Council and the National Development and Reform Commission (NDRC) established stricter approval procedures for trans-boundary rivers hydropower development than domestic river development. For instance, in the Guangxi Province that is adjacent to Vietnam, it is required that “hydropower plant projects on Xi, Xun, Qian, Hongshui, Nanpan, Liu, Yu rivers and international rivers shall be approved by the NDRC,” while hydropower stations on other rivers does not need to be approved by the NDRC unless their installed capacity is 250 MW above.\(^11\) The Chinese government also established the International River Working Committee in 2006 to coordinate hydropower development and ecological system issues with downstream countries.\(^12\) China’s hydropower exploitation of its trans-boundary rivers is much slower than that of inland rivers (see Graph 2: Kaplan-Meier Survival Estimates of China's Hydropower Development). As of yet, Nu River mainstream remains an untapped river. And, there is only one hydropower plant on Yaluzangbu River.

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\(^9\) Liu Shixin; Ecological Worries of Long River Induced by Xiaonaihai Hydropower Station; China Youth Daily; April 12th; 2015
\(^10\) According to Ministry of Water Resources, PRC’s classification, Hydropower Stations are divided into 5 categories, Large Type 1, Large Type 2, Medium Size, Small Type 1, and Small Type 2. Hydropower stations whose installed capacity are 300 MW or above are classified as “Large Type”.
\(^12\) Meng Xiaolu: 打造跨境河流上的“绿色水电” (Construct “Green Hydropower Project” on trans-boundary rivers); China Reform Daily; December 27th, 2012
However, since 2012, all of these cautions suddenly disappeared. From 2006 to 2011, the NDRC only approved four hydropower plants on Lancang River, Yaluzangbu River, and Nu River, China’s three largest trans-boundary rivers according to their hydropower reserves. In 2012 alone, it preapproved four hydropower projects on these three rivers. In January, 2013, the State Council announced an extremely ambitious hydropower plan within the 12th Energy Plan. In this plan, 66 large hydropower plants are listed as “key projects” and 20 of them are on trans-boundary rivers. This plan proposes to start the construction of 120 GW conventional hydropower during the 12th five-year plan period. This huge volume is as much as 30% of China’s overall economic exploitable hydropower, and 48.10% of the total hydropower projects that have been constructed. The 12th Energy Plan listed most of China’s remaining hydropower reserves, after which 85% of China’s large and medium scale hydropower exploitation could be finished. One most salient features of this round of hydropower development is that it is rushed. It is like hurrying to resolve an unexpected crisis.

ALTERNATIVES

Energy demand, “Development of the West Regions” (referred to as “Go-West”) and climate change are three popular arguments explaining China’s hydropower policy. These arguments may have worked well in the past, but they cannot explain why China has accelerated its hydropower development in an era of excess electricity and economic slowdown. Rather, a

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14 Calculated by the author based on the date from the “12th Energy Plan” and “Chinese Hydropower Science and Technology Development Report 2012”
15 Ibid
better explanation for China’s new rash of hydropower development is the CCP’s legitimacy sensitivity, a concept that I will develop more fully below.

To begin with, as we have discussed, China’s hydropower policy is not always driven by energy demand. Also, China doesn’t have any electricity shortage problem, and there is no evidence that China will have this problem in the foreseeable future. China’s Generating Equipment Availability Hours (CEAH)\(^\text{16}\) has been declining since 2011. Even though in 2011, the CEAH is only 4750—well below the standard of supply-demand balance of 5000. In 2014, this number dropped further to 4286, which indicated an electricity surplus.\(^\text{17}\) The hydropower projects in Southwestern China are a part of the electricity transmission project aims at providing electricity to Yangtze River Delta and Zhu River Delta, but provinces in these delta areas are cutting down the usage of electricity generation equipment, which is clearly not a sign of electricity shortage.\(^\text{18}\) Moreover, industrial electricity accounts for more than 70% of China’s overall electricity usage.\(^\text{19}\) But now, China has an excess capacity problem, especially in the energy-intensive industries, such as steel, aluminum, and cement. In 2013, China issued the “State Council Guidelines on Resolving Severe Overcapacity Problems,” determined to contain the expansion of these industries and cut down on obsolete tactics. China is also conducting economic structural reform, which will shift China from a manufacturing economy to a service-led economy that is much less energy-intensive than the former. Since 2011, China’s services sector output as percentage of GDP has been increasing 1.3 percentage point each year on

\(\text{16}\) Generating Equipment Availability Hours, an indicator of electricity supply-demand balance. It has three thresholds, 5500, 5000, and 4500, which suggest electricity shortage, balance, and oversupply, respectively.


\(\text{18}\) China Electricity Council, 中国电力工业现状与展望; last modified March 10th, 2015; http://www.cec.org.cn/yaowenkuaidi/2015-03-10/134972.html

average. On the contrary, the industrial sector’s share of GDP has been declining by 1.17 percentage points yearly since 2011. In 2014, the share of services sector output is 5.6 percentage points higher than that of industry sector. In light of these dynamics, the energy demand growth will be limited. In such a situation, it is unwise for the government and energy companies to launch another rush for electricity investment.

The “Go to the West Campaign” (referred to as “Go-West”) is another argument analyzing China hydropower policy. Some scholars argue that the CCP has been using large infrastructure projects, such as hydropower stations and railways, to promote the economic development of western China, which is far behind eastern China in the process of Reform and Opening-up. This argument has its basis, but it does not apply in the case of China’s hydropower development since 2012. “Go-West” is a comprehensive project that has multiple purposes. Hydropower exploitation is a part of the “West-East Power Transmission Project” under “Go-West” which was initiated in 2000 and served to solve eastern China’s electricity shortage problem through electricity transmission. Yet nowadays, Eastern China does not have energy shortage and faces an excess of electricity. If energy demand is the major driving factor of energy policy, China should slow down hydropower development, instead of speeding up.

Climate change is not enough to explain China either. This argument suggests that because China set some goals for carbon emission reduction, China must take seriously clean energy measures to achieve these goals. And hydropower is one of the few clean energy options that China has. However, in fact, the Chinese government is not enthusiastic about carbon

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20 The World Bank; World Development Indicators; Last modified: October 14th, 2015; http://databank.worldbank.org/data/
21 Ibid
22 Ibid
emission reduction. It is true that China signed the Kyoto Protocol, which was legally binding and specified reduction obligations for carbon emissions reduction in China. But, the first commitment period ended in 2012, and China did not make any further legally-binding promises for the second commitment period. In fact, during the Doha round of the UN climate change talks, China led India, Brazil, and other developing countries in resisting legally-binding emissions reduction obligations.\textsuperscript{24} In 2014 and 2015, in contrast with its behavior and attitudes toward climate change before 2013, China has made several serious and legally-binding climate pledges, most notably the “intended nationally determined contribution” (INDC) in the lead up to 2014 Paris Climate Conference. Premier Li Keqiang announced that China will cut its CO2 emissions per unit of gross domestic product by 60-65\% from 2005 levels. Moreover, China would increase its share of non-fossil fuels as part of its primary energy consumption to about 20\% by 2030.\textsuperscript{25} However, this policy shift only happened after China’s air pollution crisis when China made a comprehensive plan for air pollution. Clean energy and pollution reduction serve both the purposes of air governance and climate change. The government’s promise on air pollution governance is entirely compatible with commitment on climate change. So, although China recently made substantial climate pledges, given the timing of air governance and climate pledges, this paper argues that the latter is just an auxiliary outcome of the former.

\textsuperscript{24} Bader, Jeffrey A. “Obama and China’s Rise.” An Insider’s Account of America’s Asia Strategy (2012): p 62-67
\textsuperscript{25} Jennifer Duggan; China makes carbon pledge ahead of Paris climate change summit; The Guardian; Last accessed December 3\textsuperscript{rd}, 2015; http://www.theguardian.com/environment/2015/jun/30/china-carbon-emissions-2030-premier-li-keqiang-un-paris-climate-change-summit
MY ARGUMENT

This paper argues that China’s recent hydropower rush was a result of the CCP’s legitimacy sensitivity, which was sparked by growing number of protests on air pollution. Facing rising social unrest, the CCP prioritized the goal of appeasing the public over other factors, and took every method it could take to meet the public’s expectation. This legitimacy sensitivity argument is in line with James C. Scott’s description of authoritarian regime. Scott argues that when facing crises that threaten an authoritarian regime’s survival or popular legitimacy, the state would enhance state planning to cope with the crisis and subordinate other goals to regime legitimacy.26 Legitimacy sensitivity is rooted in CCP’s nature. The CCP is not an elected regime and its legitimacy is largely performance based, which, as Susan Shirk argues, is weak and unstable.27 What is more challenging is that China is transitioning from a developing country to newly-industrialized one. As a result, the challenges the CCP faces in maintaining its power and legitimacy increasingly involve providing good governance and public goods. If these demands are not met effectively, the CCP’s legitimacy will be undermined.28 David Shambaugh argues that the CCP is keenly aware of these challenges, and that it is attempting proactively to reform and rebuild itself, thereby sustaining its political legitimacy and power.29

Based on these analyses, this paper further argues that the CCP is not only deeply aware of its challenges, but also very sensitive to them. Faced with increasing number of challenges and growing demands for public good, as well as its unstable legitimacy, the CCP becomes highly sensitive to the issues involving public discontent and would respond sincerely and strongly to people’s demand. As Scott’s description of authoritarian state’s behavior, one

28 David Shambaugh; China’s Communist Party, Atrophy and Adaptation; (Washington DC, Woodrow Wilson Center Press, 2008); p 7
29 Ibid, p 1-9
characteristic of a sensitive government is overreaction: when an incident happens and arouses public discontent, the CCP will enhance its monopoly on policy-making and take all methods including the controversial ones to appease the public. By “overreaction”, I don’t mean that the CCP will take inappropriate or unnecessary measures, but instead argue that it will prioritize people’s demand over other goals such as economic benefit and ecological stability. Another characteristic correlated with “overreaction” is “urgency”, which indicates that the CCP will try to set an urgent timeline to solve problems. The urgency can serve as a signal to the public that the government is taking their opinion seriously. As a result of its legitimacy sensitivity, the CCP will give top priority to public demands over other issues such as technocrats and environmental activists’ opinion. When there is contradiction between public demands and other factors, such as foreign relations and economic benefits, the CCP will choose the former without much hesitation.

China’s hydropower exploitation is one component of the CCP’s response to the public desire for clean air. In December 2011, the US Embassy in Beijing began to release its own air quality data, which conflicted with the MEP’s data but was more consistent with the Chinese public’s perception. The exposure to more accurate air quality data, together with several heavy hazes that swept eastern China, caused a rapid growth of public discontent. According to two surveys conducted by Pew Research Center in March 2012 and March 2013, the percentage of respondents who thought air pollution was a big problem increased 11 percentage points to 47% from 2012 to 2013. At the same time, street protests over air pollution happened in multiple provinces, and massive online protests was going up as well, which I will introduce in the latter

part of this paper. Such social unrest presented a huge potential threat to the CCP regime legitimacy. It touched the CCP’s sensitive nerve of its legitimacy and resulted in a series of strong responses, including trans-boundary hydropower development.

International experience has already informed us that air governance is time-consuming. It usually takes several decades to effectively improve air quality. For example, starting in December 1952 when a heavy haze hit London, the government began to take serious actions to control air pollution. In 1956, the government issued the “Clean Air Act”, prohibiting the emission of dark smoke with certain exceptions. This effort continued for four decades, until 2000, the government issued the last major document, “The Air Quality Strategy for England, Scotland, Wales and Northern Ireland”, which marked the final attack on air pollution.\(^{31}\) The joint research conducted by International University of Business and Economics and Nagoya University also suggested at least fifteen to twenty years to resolve air pollution problem.\(^{32}\) Nonetheless, the CCP set a much more urgent timeline for air governance than the UK. It promised to significantly improve air quality by 2017, and to eliminate heavily-polluted weather by 2022. This is a very urgent deadline; to meet this deadline, some additional and costly projects are needed. Also, these project can serve as a signal to the public of the government’s serious efforts. So the CCP issued an ambitious clean energy plan that would quadruple its original plan and include hydropower development on trans-boundary rivers. This plan will have some environmental, economic and political costs, but they contribute to the quick solution of air pollution and more importantly the legitimacy and reputation of the CCP.

\(^{31}\) History of Air Pollution in the UK; last accessed November 8th, 2015; http://www.air-quality.org.uk/02.php
\(^{32}\) Xue Jinjun; Annual report on China’s Low-carbon Economic Development 2013; Social Sciences Academic Press; 2013; p57-58
METHODOLOGY

In this paper, I will use a statist approach to analysis the CCP’s behavior. To interpret the CCP’s hydropower and air governance policy, I will look into relevant government reports and planning documents, and examine data related to air pollution and hydropower exploitation.

First, because China still maintains many elements of planned economy, I will look into government documents to interpret China’s hydropower and air governance policy. The legacy of planned economy is still strong in the energy and infrastructure industries, where the state monopolizes the construction of large projects, regularly makes plans for infrastructure development, and regulates the development through NDRC, which is the successor of former National Planning Commission. The relevant government documents generally fall into two categories: Five Year Plans (referred to as FYPs) and Government Work Reports. FYPs are programmatic documents made by each administration to guide the development of the Chinese economy and society in the following five years. The Government Work Report is the annual report that the Chinese premier presents to the National People's Congress. In this report, the premier will conclude last year’s work, analyze achievements and shortages, and introduce the focus of next year’s work. Compared to the FYP, it provides more details, making it easier to trace the policy changes within five years.

Second, to better present China’s hydropower policy changes in the past several decades, and to compare the hydropower policies between inland rivers and trans-boundary rivers, I created a database: “China Hydropower Stations.” It is composed of 204 hydroelectric projects

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33 The data mainly come from six books, River Chronicle—One Century Record of China’s Hydropower Construction, Chinese Hydropower Science and Technology Development Report 2012, China Hydropower Development Since “Reform and Opening-up”, China Hydropower Resources Atlas, Planning Atlas of China’s Large and Medium Hydropower Stations, The Yangtze River Records. These books fall into two categories: hydropower development planning books, and hydropower exploitation chronicle. They are compiled either by hydropower
on China’s ten largest rivers by hydropower reserves, including the three largest trans-boundary rivers, Yaluzangbu River (Brahmaputra River), Nu River (Salween River), and Lancang River (Mekong River). The key variables in this database are the preapproval and approval date, the duration of hydroelectric projects, and whether or not these projects are located on trans-boundary rivers. Usually, the completion of a hydropower project will attract a lot of attention, but the completion could not reflect the policy change because a hydropower project takes many years to finish. So, I will use the approval date and preapproval date as indicators of policy change and compare it with other time series variables, such as air quality index, electricity supply and demand balance, and Chinese people’s concern over air pollution. Moreover, we can compare the development rates of inland and trans-boundary rivers to see how the government treats them differently.

CHINA’S AIR POLLUTION PROBLEM

China’s air pollution problem is deeply rooted in its energy structure, in which coal accounts for more than 60% of total energy consumption\(^{34}\). According to research by Green Peace on the haze of Beijing, Tianjin, and Hebei region (BTH),\(^ {35}\) which is China’s most polluted area, the major origins of PM 2.5\(^ {36}\) include: SO2 (34%), NOx (22%), VOCs (Volatile Organic Compounds, 19%), Primary Particles (15%), and NH3 (10%). Coal usage produces 82% of the

\(^{34}\) Data from National Bureau of Statistics, PRC; http://www.stats.gov.cn/tjsj/


\(^{36}\) The main component of China’s haze, tiny particles or droplets in the air that are two and one half microns or less in width.
total SO2, 47% of NOx, 25% of primary particles, and 18% of VOCs. Without any doubt, coal is the main origin of air pollution.

What’s more, China air pollution cannot be completely resolved by raising pollutant emissions standards. On the one hand, coal consumption is so huge that even though a low level of pollutant emission per unit could contribute to a large amount. On the other hand, another major contributor of air pollution is residential and commercial sector, which contributes 32% of primary particles, 25% of VOCs, and 14% of SO2. A lot of Chinese families, especially in rural area, are using coal stoves for heating and cooking. Compared with thermal energy department and industrial sector, it is difficult to put any emission constrains on this sector. To replace this part of coal, the government must provide other clean and substitute energy, such as natural gas, solar power, and hydropower.

THE HYDROPOWER-HAZE LINK

China’s air pollution problem has already been very severe since early 2000s and maintains at that level. Since 2008, the US Embassy in Beijing began to record the PM 2.5 value hourly. From 2008 to 2014, the daily average PM 2.5 value has been on the 90 µg/m³ level (see Graph 3: Real-time PM 2.5 Data of Beijing). This is a very dangerous level for human being, 3.6 times higher than that of the World Health Organization suggested guideline.37 However, the Chinese government did not take measures to solve the PM 2.5 based air pollution problem until 2012.38

38 PM2.5 was not included in the MEP’s air quality index before March 2012, and China’s air governance plan targeted mainly at PM10 and SO2.
After the US Embassy in Beijing released its own air quality data in November 2011, haze and air pollution became a hot topic in China. In the following year, the Chinese people’s anxiety about air quality began to grow rapidly, and reached a peak in June 2012 and January 2013 when heavy hazes swept eastern China. The two surveys conducted by the Pew Research Center documented Chinese people’s increasing worry about air quality. In spring 2012, before the heavy hazes in June 2012 and January 2013, there were 36% respondents who thought air pollution was a very big problem. In spring 2013, after the hazes, it increased 11 percentage points to 47%. At the same time when Chinese people’s concern over other social issues, such as inflation and food safety, remained at the same level or decreased slightly, the air pollution became the most salient problem in China.

Meanwhile, as the public concern burgeoned, trans-boundary rivers’ hydropower exploitation accelerated. On June 15th, 2012, shortly after the heavy haze, the NDRC preapproved one large hydropower station on Lancang River. In September, it preapproved another three stations on Yaluzangbu River at once, signaling a shift of China’s hydropower policy. This tendency continued in 2013 and 2014, during which eight large hydropower projects on trans-boundary rivers were either preapproved or approved, more than the sum of last three decades.

Another time congruence is about the expected finishing date of hydropower projects and air governance deadline. On average, a hydropower project takes 4.35 years, from the date of its being approved to its completion, while it takes 4.85 years from preapproval to formal

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39 Andrew Kohut, Richard Wike; Environmental Concerns on the Rise in China; Pew Research Center.
40 ibid
So, the average duration for a hydropower project is about 9 years, which is near the CCP’s deadline for air governance. This time coincidence naturally leads us to think that these hydropower projects were proposed in response to air pollution.

MORE THAN A FUNCTIONAL RESPONSE

Hydropower development certainly helps resolve air pollution problem. But, trans-boundary hydropower exploitation involves substantial economic, ecological and political cost, while its immediate contribution to air pollution is limited. So, I argue that China’s acceleration of trans-boundary exploitation is more than a functional response to air pollution. The CCP’s target of air governance is not merely air pollution, but people’s heart. Through restarting these hydropower projects that has been halted for ten years, the CCP can signal the public that it is trying every measure it could take to solve this problem, thus attempting to regain the people’s support. Moreover, hydropower is only one part of China’s overall response to people’s discontent with air quality. Other counter-air pollution measures also reflect the government’s overreaction, and demonstrates that they are not just functional response to air pollution problem.

1. Cost and benefit analysis

To start with, as we have discussed earlier in this paper, it is very costly to develop hydropower on trans-boundary rivers. China already has an electricity excess problem. Additional hydropower development will further erode profit margins, exacerbate the excess problem, and negatively impact the overall economic situation. Second, trans-boundary river

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41 Calculated by the author based on the data from “China Hydropower Stations”. Hydropower stations approved before 1990 are not included, whose durations are longer than 5.1 years for technological reasons.
development will provoke neighboring countries’ critics and opposition, and strengthen China’s image as “Trickle-down Hegemony”.\textsuperscript{42} India and Southeast Asian countries have accused China of cutting down water flows to downstream areas, causing floods, and harming their fishing industries because of large dams and hydropower stations. But still, the CCP plans to accelerate its hydropower exploitation on Lancang/Mekong, Yaluzangbu/Brahmaputra, and Nu/Salween, the three largest trans-boundary rivers, at the same time. Thus, the cumulative opposition will predictably be much stronger than before. Third, there are a quantity of critiques of large scale hydropower exploitation from domestic and international environmental activists, bureaucrats, and experts. Nu River and Yaluzangbu River are not only China’s major trans-boundary rivers, but also its only two remaining untapped rivers.\textsuperscript{43} For this reason, the opposition for restarting hydropower development on these two rivers would be extremely strong. Given these factors, it would be better and less controversial if China focuses on the development of domestic rivers alone.

Also, the contribution of hydropower development on trans-boundary rivers to air governance is limited. On the “12th Energy FYP”, the total installed capacity of proposed hydropower projects on trans-boundary rivers is only about 18\% of the overall installed capacity of all newly proposed hydropower projects, and 10\% of China’s other renewable energy’s total installed capacity.\textsuperscript{44} What’s more, renewable energy is just one part of CCP’s comprehensive air governance plan. (See Graph 4: China’s Air Governance and Clean Energy Plan by 2020). In short, hydropower on trans-boundary rivers is only a small proportion of China’s air governance

\textsuperscript{42} Liebman, Alex. "Trickle-down Hegemony?: China’s" Peaceful Rise” and Dam Building on the Mekong.” Contemporary Southeast Asia: A Journal of International and Strategic Affairs 27, no. 2 (2005): 281-304.

\textsuperscript{43} There is only one hydropower station on Yaluzangbu River. And the hydropower exploitation rate on Yaluzangbu River is only about 1\%.

\textsuperscript{44} Numbers are calculated by the author based on the data from the “12th Energy Plan” and the author’s hydropower database
plan. Without this part of hydropower, the CCP can still resolve the air pollution problem effectively.

2. An urgent deadline

The CCP’s urgent deadline of air governance is also an indicator of its overreaction. According to international experience, air pollution governance is a long-term project. It took London and Los Angeles several decades to eliminate haze weather. However, the CCP promised to basically eliminate heavily-polluted weather in ten years, which is a much more urgent timeline than other countries. The “Action Plan on Prevention and Control of Air Pollution” (Referred to as “Action Plan”), which is China’s guiding document for air governance, set two important deadlines, 2017 and 2022. By 2017, “the overall national air quality shall be improved. Heavily polluted days shall be reduced dramatically. Through another five years’ or longer efforts, heavily-polluted days shall gradually be eliminated and the national air quality shall be improved significantly.”

Other countries’ experiences have shown that air governance needs time. If the CCP only wanted to resolve air pollution problem, it did not need to set such an urgent timeline. It could make a less ambitious and less controversial plan, which could enable the CCP to deal with air pollution calmly and orderly. This urgency suggests that CCP’s goal is not merely air quality, but people’s heart.

3. “Overreaction” in other measures

Hydropower is just one part of China’s comprehensive counter-air pollution plan. To resolve China’s air pollution problem, there are three general principles: energy consumption control, pollutant emission control, and clean energy alternatives. For each of these three aspects,
we can see a distinctive feature of “overreaction”. For instance, in 2012, the Chinese government upgraded their thermal power emission standard, which was called the toughest standard in history. It is comparable to, and in many aspects even stricter than, the standards in the EU and the United States. With regard to clean energy alternatives, in the 2007 “Long-term Development Plan for Renewable Energy” (referred to as “2007 Renewable Energy Plan”), the Chinese government expected to develop about 150 GW renewable energy from 2010 to 2020, which was upgraded to 340 GW in the 12th Energy Plan. Furthermore, China proposed to increase the portion of natural gas in its energy consumption whose amount equals 340 GW by 2020 (see Graph 4). All combined together, it quadrupled its original clean energy plan.

**LEGITIMACY SENSITIVITY AS AN INTERVENNING VARIABLE**

The PM 2.5 based air pollution problem can cause damage to people’s respiratory system and trigger heart disease. According to a research of Peking University College of Environmental Sciences and Engineering, the January 2013 haze caused at least 23 billion yuan economic loss. Among the 27 cities that released the medical information, the number of emergency cases during the haze increased significantly, ranging from 10% to 150% respectively.45 Furthermore, People’s environmental consciousness is awakening. According to the Chinese Academy of Social Sciences’ statistics, 30% of China all mass events and 50% of the mass events that involved ten thousand people and above are caused by environment issues in 2012.46 Compared to individual contentious issues such as water pollution and land disputes, air pollution often involves multiple provinces and influence tens of and even hundreds of millions people’s health.

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45 Mu Quan, Zhang Shiqiu; The economic cost evaluation of haze event in China; 中国环境科学, 2013 (11)
46 Li lin, Tian He; Annual Report in China’s rule of law No.11 (2013); Social Sciences Academic Press, 2013(2); p271-286
It is more likely to instigate collaborative protests in different regions than other issues. Since 2012, a series of street protests about air pollution have happened in Zhejiang, Sichuan, Shanxi, and Guangdong Provinces. People do not protest against haze per se, but when people’s anxiety about air pollution is combined with a specific project that may pollute the air such as waste incineration plant, people will be more easily mobilized. For example, in Heyuan City, Guangdong Province, the protest against a waste incineration plant attracted more than ten thousand protestors. In addition to street protest, there are other forms of protest such as through performance art. The Internet also facilitated the expression of the public’s discontent. The Shaanxi protest was organized through social media Wechat, and in addition to Shaanxi, coordinated protests also happened in Jiangxi, Sichuan, and Hunan provinces. People were also protesting on social media such as Weibo. Even the official media CCTV complained the Beijing Municipal Government for doing nothing on Weibo when a heavy haze hit Beijing, which gave Beijing a lot of pressure and forced it to take some actions. To cope with this online trend, substantial government departments opened their own Weibo accounts. For instance, in Shandong province, starting in May 2013, the provincial Department of Environment Protection, all the 17 city level departments of environment issues, and more than 100 county counterparts opened Weibo to communicate with the public. Moreover, the most notable online protest case is the documentary made by a former hostess, which was released on line and attracted two

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48 Li Wen; 广东河源上万人游行抗议发电厂项目 (More than ten thousand people protest against thermal power plant plant in Heyuan, Guangdong Province); BBC China, April 20, 2015; http://www.bbc.com/zhongwen/simp/china/2015/04/150412_china_guangdong_protesters
49 Air fetches $860 in China Artist sells jar to protest pollution, The Journal-gazette (Fort Wayne, Ind.), A.2 April 27th, 2014
50 Xiao Shan; 中国各地发生民众抗议雾霾示威但都遭警方制裁 (Protests happened in multiple regions in China, but was punished by the police); rfi; Last modified on October 3rd, 2015; http://cn.rfi.fr
51 Dan Levin; 北京严重污染，政府删除微博批评声音 (Beijing faces heavy pollution; the government deleted critique on Weibo) New York Times; Last modified February 26th, 2014; http://cn.nytimes.com/china/20140226/c26snoq
52 公众环境中心; 2013-2014 年度 120 城市污染源监管信息公开指数 (PITI) 报告; January 1st, 2015
hundred million viewers within forty-eight hour. Such online protests would contribute to people increasing awareness of environmental issues and may trigger more large protests like the Heyuan case.

In summary, the pervasiveness of haze, the awakening public consciousness about environment issue, and the facilitation of the Internet, these three factors combined created a potentially mobilizable population that is as large as the whole population living in Eastern China and industrial centers. This is a very severe challenge to the CCP. If heavy hazes keep attacking China, people’s discontent will keep growing and may result in more and more protests. To avoid such gruesome situation and win back the Chinese people’s support and trust, the CCP must give a strong response and resolve the air pollution as soon as possible.

1. **The Chinese Leaders’ Repeated Statements and Promises**

The CCP’s first response to air pollution was in February, 2012. Premier Wen Jiabao approved the modified Ambient Air Quality Standards, which included PM 2.5 and raised the standards of air quality. On March 5th, 2012, in the Government Work Report 2012, he demonstrated his strong commitment saying, “We will show the world with our actions that China will never seek economic growth at the expense of its ecological environment and public health.” On March 18th, 2013, the Government Work Report used a whole chapter focusing on air pollution. Premier Wen again offered reassurance that he was committed to facing this challenge. After Wen’s retirement, new leaders also showed their deep concern for this

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53 DoNews; 柴静《穹顶之下》引爆网络: 48 小时视频播放超 2 亿(Chai jing’s “Under the Sky” has been viewed for more than two hundred million times in forty-eight hours); last modified March 2nd, 2015; http://www.donews.com/net/201503/2882208.shtml
54 The National Council; Premier Wen Jiabao Chaired a State Council Executive Meeting; Accessed March 26th, 2015; http://www.gov.cn/ldhd/2012-02/29/content_2079351.htm
55 Wen Jiabao; Government Work Report 2012; State Council, Last modified March 2012; http://www.gov.cn/test/2012-03/15/content_2067314.htm
problem and determination to resolve it. From May 2013 to November 2014, President Xi Jinping four times publicly showed his resolution for air pollution governance. President Xi, during the congress meeting in March 2014, stated that “Air quality is directly linked to people’s perception of happiness”. Premier Li also promised to improve air quality in three to five years.57

2. Relevant Government Planning and Legislative Acts

Following the Chinese leaders’ speeches and promises, relevant government departments quickly made their plans and legislative acts. In October, 2012, the “Air FYP” was issued, which was the first FYP that specifically focused on air pollution. In September, 2013, the State Council issued the “Action Plan on Prevention and Control of Air Pollution”, which provided ten comprehensive and specific methods for reducing air pollution, and set clear goals of PM 2.5 reduction for every area. Together with the plan, the MEP signed the “Responsibility Letter for Air Pollution Control” with thirty one provinces, autonomous regions, and provincial municipalities, which prescripts timelines for air quality improvement and detailed criterions. The National Energy Administration, the NDRC, and each province also enacted many other supporting documents.

Through these plans and documents, the CCP wove a web composed of a guiding principle, an action plan, and the specific action plans for each region and relevant industries, more detailed implementation plans and concrete regulations for a certain area and certain industry, assessment methods for the State Council and supervision channels for the public (see Graph 5: Process and Structure of the Chinese Government’s Air Governance).

3. New Hydropower Development Plan

57 Jia Yue, Chang Hong; Li Keqiang: Improve Air Quality in Three to Five Years; People’s Daily; Last Modified October 24th, 2013; http://politics.people.com.cn/n/2013/1024/c99014-23312046.html
All these government documents and plans make up China air governance plan, which include three general guidelines: energy consumption control, pollutant emission control, and clean energy alternatives (see Graph 4). Trans-boundary hydropower development is a part of this comprehensive plan. Three guiding government documents on air governance and energy development directly indicated the link between haze and hydropower exploitation. The first is the “12th Five Year Plan on Air pollution Prevention and Control in Key Regions” (Referred to as “Air FYP”) in September 2012, which said “Accelerate the development of natural gas and renewable energy in order to realize a clean energy supply and diversified energy mix”, and “Actively develop hydropower with consideration to ecologic conservation and migration resettlement”. The “12th Energy Plan” in January 2013 enacted the most ambitious hydropower plan, including 20 large hydropower projects on trans-boundary rivers. It also point out the reasons for such a huge plan, specifically that, “the ecological and environmental constraints become salient, green development is imminent”. The last is the “Energy Industry Work Plan to Strengthen Air Pollution Control”, which, as its name shows, points out the connection between air pollution and energy. In the work plan, it is directly suggested “constructing key hydropower bases on Jinsha River, Lancang River, Yalong River, Dadu River, and midstream of Yaluzangbu River” as way to eliminate air pollution. Two of the three main trans-boundary rivers were listed in the plan.

CONCLUSION

Going back to the question that I raised at the beginning of this paper, “why does China suddenly launch such a large-scale hydropower development,” my answer is the CCP’s legitimacy sensitivity. Aroused by increasing social unrest, this sensitivity stimulates the CCP to
give a strong response to people’s demand. Also, it encourages the CCP to tighten its control
over policy-making and overlook opposing voices in order to utilize all the resources it has to
respond to the public. Hydropower development on trans-boundary rivers has been controversial
for its ecological cost and potential conflicts with downstream countries. Many Chinese NGOs,
technocrats, experts and international organizations have opposed hydropower development on
international rivers, especially the untapped Yaluzangbu River and Nu River. The CCP took
this opposition into consideration and halted many hydropower projects before 2012. However,
since 2012, facing rising social unrest over air pollution, the CCP perceived potential legitimacy
crisis and responded to it with a comprehensive air governance plan including a restart of these
hydropower projects. Such hydropower projects’ contribution to air governance may be limited,
but they could serve as a signal of the government’s sincerity, and thus to reconcile the public’s
discontent.

In 2014, compared to 2013, the average PM2.5 concentration of the 74 cities that have
the data declined 11.1%. In the three major polluted area, namely Beijing and neighboring area,
Yangtze River delta, and Zhu River delta, the concentration declined 12.3%, 10.4%, and 10.6%
respectively. In April 2015, compared to April 2014, the PM2.5 concentration in Beijing and
neighboring area declined 20%.

These number shows the effectiveness of the CCP’s air
governance. Hydropower played an important role in this achievement. Since 2011, the CEAH of
thermal power equipment has been declining, while the number for hydropower equipment has
been increasing. In 2014, the share of hydroelectricity as percentage of all electricity increased

58 There is only one hydropower project on Yaluzangbu River, and its capacity is only about 1% of this river hydropower’s potential.
59 http://www.npc.gov.cn/npc/xinwen/2015-06/29/content_1939889.htm
60 Data from National Bureau of Statistics, PRC; http://www.stats.gov.cn/tjsj/
to 19% from 15% in 2011.\textsuperscript{61} Although the proposed hydropower projects are not finished yet, the increasing use of hydroelectric equipment has shown the effectiveness of hydropower.

In 2014 and the first half of 2015, the NDRC did not preapprove any hydropower projects. On the one hand, this shows that China has basically stopped proposing new hydropower projects and its future development will be based on the “12th Energy Plan”. On the other hand, it demonstrates my argument that this round of hydropower development is targeted to meet the air governance deadline of 2022. Whether China will further develop remaining hydropower reserves depends largely on its air quality in the near future and the effectiveness of other efforts to govern air pollution.

\textsuperscript{61} Ibid
APPENDIX

Graph 1: China’s Hydropower Plants on Major Rivers

Graph 2: Kaplan-Meier Survival Estimates of China's Hydropower Development

Note: the starting analysis time “0” denotes the year 1949 when PRC was founded

(Data Resource: the hydropower database created by the author, and Chinese Hydropower Science and Technology Development Report 2012)
Graph 3: Real-time PM2.5 Data of Beijing (2008-2014)


Graph 4: China’s Air Governance and Clean Energy Plan by 2020


Graph 5: Process and Structure of the Chinese Government’s Air Governance
Process and Structure of the Chinese Government's Air Governance


China Society for Hydropower Engineering; China Hydropower Development Since “Reform and Opening-up” (改革开放三十年的中国水电); China Electric Power Press, 2009.


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Liu Shixin; Ecological Worries of Long River Induced by Xiaonaihai Hydropower Station; China Youth Daily; Last Modified April 12th, 2015; http://zqb.cyol.com/html/2015-04/12/nw.D110000zgqnb_20150412_10-02.htm

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