How Do Experts Work Differently at Various Levels of Government in China’s Climate Change Policy? A Comparative Study

Liang-Yu Chen
PhD student, Leiden University Institute for Area Studies

Abstract
While the previous studies have shed some light on how experts influence China’s policymaking, this paper steps a bit further to ask: How do experts at different governmental levels work differently on the same policy? How do they interact or cooperate to carry out a policy project? Focusing on China’s climate policy, the paper discusses the ways in which experts at Beijing and experts at the local (particularly in Guangdong Province) engage in the work of ‘greenhouse-gas (GHG) emissions inventory’ and ‘low-carbon planning and low-carbon city pilot.’ Based on the primary data from interviews conducted during the three field visits of the author between 2014 and 2016, the paper found out that the two categories of experts focus on different aspects of China’s climate policy. While the Beijing experts mainly focus on the high-end rationale and framework of decision-making, local experts emphasize on the practice of the policy work. Although the focus of the two categories of experts varies, there still appears a collaborative relationship built up by the experts at the central and experts at the local. The paper also deals with the question that why local governments are looking for assistance from experts at Beijing. The answer to this question not only relates to the knowledge gap as well as the division of labor between the experts at the central and the local, but also indicates the political considerations of local cadres in China’s domestic climate governance.

Keywords: China, experts, climate governance, climate policy, low-carbon development

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1. Introduction

As the largest greenhouse-gas (GHG) emitter and energy consumer in the world, China has been undertaken both external and internal pressures to take actions for curbing climate change. Though refusing to make any commitment for emission reduction during the formation of the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol in the 1990s, China has gradually evolved from a passive participant to a proactive actor when the globe stepping into the post-Kyoto period. To shift the focus to China’s domestic climate governance, since 2010, the National Development and Reform Commission (NDRC) has launched a series of national pilot projects mandating local governments to experiment initiatives for so-called ‘low-carbon development.’

The novelty of such actions signifies the need for a better understanding of China’s domestic response to climate change, and the questions then arise: Who are the key actors in placing climate governance on China’s domestic policy agenda? Based on the authoritarian model of China’s political system, previous studies have shown that the state actors, or the governmental organs, are the dominant actors in China’s climate policy processes (Conrad, 2010; Zang, 2009, 2010; Gilley, 2012, Beeson, 2010, 2016). Yet, apart from the governmental actors, scholars from different disciplines tend to emphasize on the important role of experts in China’s climate politics (Richerzhagen and Scholz, 2008; Liu, 2013; Wübbeke, 2010, 2013; Francesch-Huidobro and Mai, 2012; Mai and Francesch-Huidobro, 2015; Zhao and Wu, 2016): A growing number of experts employed at research institutions, academic organizations, civilian think tanks, and non-governmental organizations, have been involved in China’s climate policy processes. They not only acted as policy entrepreneurs in disseminating ideas such as ‘low-carbon economy’ and ‘low-carbon development’ to both governmental and societal actors (Hofem and Heilmann, 2013), but also formed the space for improving policy coordination between the various governmental sectors in urban climate governance (Francesch-Huidobro and Mai, 2012; Mai and Francesch-Huidobro, 2015; Chen, 2017).

While the existing literature has shed some light on the political engagement of experts in China’s climate governance, what remains unclear, however, is how experts at different governmental levels work on the same policy, and how the experts at different governmental levels interact or cooperate to carry out a policy project. In this respect, this paper uses two case studies: GHG emissions inventory and low-carbon planning and low-carbon city pilot, seeking to explain how experts at the central level and experts at the local level engage in one policy process, and how the two categories of experts interact or cooperate in carrying out a policy project. The research material for this paper is based on the primary data from interviews conducted during the three field visits of the author between 2014 and 2016. The interviewees are mainly experts highly involved in China’s national or local climate
governance; some of them have experienced a ‘temporary transfer’ (jie diao) to government departments or served at ‘temporary positions’ (gua zhi) to work alongside government officials. Starting from the next section, the paper examines the experts’ involvement in the policy work of China’s ‘GHG emissions inventory’ and ‘low-carbon planning and the low-carbon city pilot,’ and how experts at different governmental levels interact or cooperate to fulfill the work. The fourth section is discussion, the paper deals with the question that why local governments are looking for assistance from experts at Beijing.

2. Case study 1: GHG Emissions Inventory

The work of emissions inventory can be viewed as the cornerstone of local climate governance because it provides the systematic accounting of GHG emissions in an aggregate form on energy use, industrial production process, agriculture, changes in land use and forestry, and waste. It then allows the identification of the most effective areas of action and the preparation of more feasible policies, leading to the development of effective and efficient plans including essential key players and stakeholders (D’Avignon et al., 2010: 4838-4839). According to the Article 4 and 12 of the UNFCCC, China, as a member of the international regime, has duties to provide information to disclose its status and present work of combating climate change, including its national GHG emissions inventory. In terms of China’s domestic climate governance, the compilation of an emissions inventory of a province or city implies “the through scrutiny of the local” (mo di) and serves as a guide indicating the policy directives for the region. Since the procedures of bottom-up reporting and the verification of GHG emissions are left to local governments, the central government can proceed with top-down, centralized supervision of the process instead of to investigate all the provinces individually (Chen, 2017: 23). Also, considering that the emissions inventory includes data revealing not only the development status of local authorities, but also provides a broad outline of the performance of local governments, it is deemed too politically sensitive to commission such work to private enterprises. Hence, local research institutions or universities are considered to be more appropriate entities for undertaking such work (China Climate Change Info-Net, 2010).

When China submitted its Initial National Communication (INC) to the UNFCCC in 2004, the INC contained China’s national GHG emissions inventory in the year of 1994. Four years later, China started the preparation of its Second Communication of Climate Change in 2008, and planned to compile the national GHG emissions inventory based on the data of 2005. In 2010, the NDRC launched the GHG emissions inventory pilot; seven provinces and cities have been selected to complete the work before the end of 2011. In the following, this paper examines how experts at Beijing and at the local were involved in the work of
emissions inventory, and how experts at different governmental levels interacted and cooperated during the compilation of emissions inventory.

(1) Experts’ involvement in China’s emissions inventory: tales in Beijing

While the NDRC promulgated the pilot for local governments in October 2010, the Guideline for Provincial GHG Emissions Inventory has yet been launched simultaneously. Hence, one primary task of experts at Beijing is to develop the Guideline for local government officials and research institutions as instructions to complete the work of emissions inventory. Under the supervision of the NDRC, several official and semiofficial research institutions participated in the compilation of the Guideline.2

From the perspective of the central, Beijing authorities and experts pay particular attention to the rationale (li lu) of China’s emissions inventory not only because the inventory system has to be applied to all the regions of the Chinese mainland, but also because it has to fit the standards that derive from the international organizations, such as the Intergovernmental Panel on Climate Change (IPCC) and the International Council for Local Environmental Initiatives (ICLEI) (Interview 55). However, due to the vast political, economic, and social difference between regions in China, it was challenging to formulate an inventory system that could capture all of the features of different regions of the Chinese mainland.3 Yet, led by the Energy Research Institute (ERI) which is an official think tank under the NDRC, Beijing experts finally compiled the Guideline for Provincial GHG Emissions Inventory in 2011 and organized a series of training programs for local government officials as well as the experts who will actually undertake the investigation and data collection process.

At the stage of capacity building, Beijing experts assisted the central government officials with building up the accounting and reporting standard as well as sector guidance, and to disseminate the policy-relevant knowledge to Chinese local states.

While the experts who contributed to the compilation of the Guideline are mainly employed at official or semiofficial research institutions in Beijing, some international non-governmental organizations (INGOs) also play a vital role in developing calculation tools for

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2 The institutions are: (1) Energy Research Institute, (2) Tsinghua University, (3) the Institute for Atmospheric at the Chinese Academy of Sciences, (4) the Institute of Environment and Sustainable Development in Agriculture at the Chinese Academy of Agricultural Sciences, (5) the Institute of Forest Ecological Environment and Protection at the Chinese Academy of Forestry, and (6) the Center for Climate Change Impact Research at the Chinese Research Academy of Environmental Science.

3 For instance, cities along China’s east coast often face shortages of energy resources while occupied by large-scale and energy-intensive industries, while cities in China’s west are often resource-rich but underdeveloped. Moreover, cities in China’s northeast are often labeled as ‘old-industrial bases.’ Since the energy structure and the key industries differ for each region, the emissions inventory therefore varies.
Chinese cities and enterprises regarding carbon accounting. The Greenhouse Gas Protocol (GHGP) offered by the World Resources Institute (WRI) is one notable example to show that how expertise can facilitate policy work in China’s domestic climate governance: not only cities but also enterprises came to Beijing and requested for methodological instructions and technical support to fulfill their work of GHG emissions inventory (Interview 33).

In terms of the procedure of bottom-up reporting and top-down supervision of the process, once a province or city submits its report on the methodology, data, and analysis of its GHG emissions inventory, the NDRC officials along with the review committee composed of at least five selected leading experts (mostly from governmental or semi-governmental research institutions in Beijing) will carefully examine the report and verify the document (Chen, 2017: 24). According to the expert who used to engage with the research funded by the National Key Technology R&D Program, the guideline is expected to be the accordance and a starting point for local cadres to deploy climate policies. Hence, the guideline and administrative regulations released by China’s central government is claimed to be theoretical, comprehensive, applicable and operational (Interview 55). Nonetheless, as I will discuss in the subsequent section, local actors have different interpretations regarding the guideline and regulations released by the central government officials and experts.

(2) Experts’ involvement in China’s emissions inventory: tales at the local states
While the authorities and experts at Beijing emphasize more the rationale of the standardized framework of the GHG emissions inventory in order to establish a comprehensive theoretical model to connect to the international system, government officials and experts at the local, however, stress more on the application and practical aspects to accomplish their policy work. Hence, to embody the central’s rationale, there is a need for local actors to attach to (dui jie) the central and to bring the instructions grounded (Interview 55).

As mentioned earlier, considering the sensitiveness of the local GHG emissions inventory, experts employed in public institutions or universities are more appropriate to undertake the work of data collection. To investigate the data at the local states, the first step for experts is to use open resources to acquire items which are needed for the emissions inventory. If the relevant data does not exist in the official document, i.e., the statistical yearbook, experts will contact the related functional departments to request for data. According to the interviewees’ experiences, either the head of the department nor the street-level bureaucrat is the desirable government official for experts to inquire data. Instead, those core members for professional work (yewu gugan) in the department, who are often take position at the vice-sectional or vice-ministerial level, have the competence in providing such data (Interview 39 and 55).

In addition to collecting data from the public sector, experts also provide training programs for the private sector actors to facilitate the information disclosure of the industries.
In Guangdong Province, where the knowledge network is well established for local climate governance, several research institutions joined the task force that led by the Techno-economy Research and Development Center to aid the investigation and data collection process; each research institution is responsible for collecting a particular source of GHG emissions in Guangdong Province (Table 1).

Table 2: Contribution of research institutions to Guangdong’s GHG emissions inventory

<table>
<thead>
<tr>
<th>Source categories of the GHG emissions inventory</th>
<th>Main responsible research institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy use</td>
<td>Guangdong Techno-Economy Research and Development Center (GDTE)</td>
</tr>
<tr>
<td>Industrial production process</td>
<td>Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences (GIEC)</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Guangdong Academy of Agricultural Sciences (GDAAS)</td>
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<tr>
<td>Changes in land use and forestry</td>
<td>Guangdong Academy of Forestry (GDAF)</td>
</tr>
<tr>
<td>Waste</td>
<td>Guangdong Provincial Academy of Environmental Sciences (GDAES)</td>
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Source: Chen (2017: 23).

Considering a majority of local government officials and enterprises are with limited competencies regarding the relatively high technical data, it is quite common that there is a lack of compliance as well as the good-quality data in the local states. Hence, not only the sources and credibility of local GHGs emissions data, but also the administrative regulatory system is questioned by the experts based in Beijing (Interview 32, 33, 34, 39, and 55). For instance, according to the mandate of the central government, all Chinese provinces have to compile the ‘energy balance sheet’ to demonstrate the relationship between energy use and GHG emissions. While most of the provinces can complete the work, some government officials at the prefecture city level encounter difficulties to compile the energy balance sheet because of the lack of energy-related statistics data, not to mention the cadres at the lower governmental levels (Interview 32, 34, 35 and 55). In many cases, the ‘default value’ appears quite often to replace the ‘measurement value’ in the section of ‘emission factors’ in the local emissions inventory (Interview 32 and 55).

One interviewee shared his experience when investigating the amount of petrol and diesel consumption of Guangyuan, a prefecture-level city in Sichuan Province. When he checked the items and values in the emissions inventory of Guangyuan, the number disclosed by the oil company differs with the number released by the Guangyuan Municipal Development and Reform Commission and the Guangyuan Statistics Bureau. To solve this problem, a group of experts had to visit the governmental department to work with the core members for professional work, trying to verify the accuracy of the data (Interview 55).
Hence, experts who used to work at the official think tanks talked about the three conditions for compiling a good emissions inventory: (1) the proper methodology developed by the central, (2) the correct calculation counted by the local implementer, and (3) the accuracy of the data (Interview 30 and 33).

Then, what is the reaction of local actors (authorities and experts) when the central governmental officials and review committee from Beijing questioned the validity of the local emissions inventory? The Guangdong experts explained how they used their expertise to defend the specified data? For instance, per capita CO₂ emissions ensuing from the process of power generation were much lower for Guangdong Province than the national average, raising concerns that the data may be inaccurate. When being questioned about the reasons for the below-average figures for Guangdong Province in comparison to other provinces, experts showed that, firstly, thermal power generation is more energy efficient and that power plants hence emit less CO₂. The experts secondly showed that Guangdong Province has constructed power plants running on nuclear power and natural gas in the past few decades. Hence, the structural change related to power generation also led to a decrease of per capita CO₂ emissions by means of the power generation process (Interview 52). The expert who works at the public institution under the Guangdong Provincial Department of Science and Technology provided an additional example to explain the way in which the thinking process and actions of local experts differ markedly from that of experts acting as consultants for the central government. Based on the experience of the data collection process and consequent communication with local enterprises, Guangdong experts have developed an attitude of ‘grasping the large and releasing the small’ (zhuada fangxiao). For instance, when measuring the combustion efficiency of boilers in different industries, experts often code the value as 100% instead of calculating an accurate number because, according to their practical knowledge, the combustion efficiency for all Guangdong industries (for example for the thermal power industry, cement industry and the iron and steel industries) is already considered to be above 98%. Similarly, an item in the emissions inventory called ‘desulfurization efficiency’ records emissions when sulfide is burned or decomposed during the industrial production process. In Guangdong, the value of desulfurization efficiency is usually higher than 95%; hence, experts often directly recode the value as 100% instead of investing additional time in determining the exact value (Interview 52).

Echoing the above reflection regarding the strategy of ‘grasping the large and releasing the small,’ another expert shared his observation that the guidelines compiled by Beijing experts are relatively high-end and difficult to implement at the local level. As he explains, if the forms and questionnaires for the emissions inventory are too difficult to fill out, local enterprises with limited competencies are likely to view it as the government’s attempt to make life hard for them, and are therefore inclined to resist the disclosure of requested data (Interview 48). Hence, Beijing authorities and experts are regularly reminded during
conferences and workshops that overtly complicated procedures formulated at the central government level may impede work at the local level if such guidelines are too byzantine (Chen, 2017: 24). Furthermore, even some Guangdong experts who used to attend the training sessions organized by the Energy Research Institute (REI) at Beijing considered the guideline launched by the central government to be overtly theoretical and somewhat problematic to engage with. As an alternative, experts had to develop ‘local knowledge’ through a process of trial and error in order to explore the most feasible ways to compile the GHG emissions inventory (Chen, 2017: 23-24).

From the above discussion, this paper argues that the GHG emissions inventory serves as another case to interpret the central-local relations in Chinese political system. On the one hand, experts based in Beijing worry the degree of local implementation of the guideline to complete the work of emissions inventory. On the other hand, local experts complain that the central’s instructions to be too high to bring to the ground.

(3) Interactions between the experts at Beijing and experts at the local in the case of emissions inventory

The paper has discussed the ways in which experts at Beijing and experts at the local engage in China’s GHG emissions inventory. The experts at Beijing contribute to building up the framework and methodology of emission inventorying, organizing training programs for local actors, and being members of the review committee to verify the emissions inventory compiled by local actors. Meanwhile, experts at the local contribute to training local government officials and private sector actors, and the investigation and compilation of the emissions inventory. Though experts at different governmental levels share different focus on their policy work, still, the two groups of experts have opportunities to cooperate in China’s local climate governance.

In most cases, the collaborative work between experts at the central and at the local appears when local governments decide to look for technical assistance from different kinds of research institutions in Beijing. For instance, Dujiangyan, a city in Sichuan Province, used to invite experts at the China Beijing Environment Exchange to help compile the city’s GHG emissions inventory. Another city in Sichuan Province, Chengdu, cooperated with the World Resources Institute (WRI) to compile its GHG emissions inventory. Qingdao, a city in Shandong Province, also received the assistance from WRI to establish a GHG emissions accounting management system. Meanwhile, several provinces and cities (Beijing, Hainan Province, and Yunnan Province) used to ask the experts at Tsinghua University to assist with their work. Lastly, Guangyuan, a city which was hit by Wenchuan earthquake in 2008 and tried to rebuild its homeland, received the assistance from the experts employed at the Chinese Academy of Social Sciences (CASS) to fulfill the work of GHG emissions inventory.
In general, experts based in Beijing do not actively come to a province or city to collect data either for local governments or their use, given the fact that their involvement is due to local governments’ invitation. Rather, it is common that Beijing experts cooperate with experts who are employed at local research institutions, i.e., public institutions under the governmental departments or universities, to compile the GHG emissions inventory. The general collaborative mode between experts at Beijing and at the local is that Beijing experts provide methodological instructions or technical support, while local experts are responsible to investigate as well as to collect data from the government and private sectors. After the raw data is collected, it is still the experts employed in local research institutions that undertake the work of data analysis (Interview 33, 34, 35, and 55).

3. Case study 2: Low-carbon planning and low-carbon city pilot

At the local levels, Chinese authorities did not seem to prioritize climate governance until 2009 while the Chinese political leaders eventually announced the target and timetable for GHG emissions mitigation (Chen, 2017: 17-18). Correspondingly, before this year the notion of low-carbon development and climate-resilient growth was nowhere to be found in provincial regulations (Mai and Francesch-Huidobro, 2015: 81). Once Chinese political leaders made the commitment in 2009, the wind of ‘combating climate change’ was blowing from Beijing to all the provinces in China.

However, at the infancy stage of low-carbon development, both central and local authorities have limited knowledge regarding how to deploy policy measures for tackling climate change. Regardless of Chinese authoritarian tradition of top-down governing approach and the adoption of ‘target responsibility system’ to enhance local enforcement of central’s policy, China’s central government has yet come out a clear policy system concerning low-carbon development. Hence, Beijing authorities were inclined to use pilot initiatives as a tool to explore policy models of low-carbon development in China. Meanwhile, many international organizations and research institutions have partnered with China’s local governments and their stakeholders to start exploring with the planning and practices of low-carbon cities in China. For example, in 2008, the World Wildlife Fund (WWF), an international environmental non-governmental organization, launched the ‘low-carbon city initiative’ and selected Baoding (Hebei Province) and Shanghai as the first two pilot cities in recognition for their leadership in the issue domain. While the term ‘low-carbon’ became popular, a large number of local governments have expressed their interests and capabilities to carry out the pilot projects.

As a reaction to both international and local trends of low-carbon city initiative, and its decision to take cities and provinces as a gripper (zhua shou) rather than to deploy traditional
industrial and sector-based policy, the NDRC issued the first batch of pilot initiative for low-carbon provinces and cities; five provinces and eight cities were chosen to undertake the pilot initiative in July 2010. In December 2012 and January 2017, the NDRC announced the launching of the second and the third batch of ‘low-carbon city pilot;’ 29 and 45 cities, provinces and autonomous regions were selected to implement the initiative respectively.

When the NDRC launched the pilot initiative of low-carbon provinces and cities, it mandated the pilot regions to fulfill the work with five missions: (1) to propose a low-carbon development plan, (2) to formulate supporting policies for low-carbon and green development, (3) to build up a low-carbon industry system, (4) to establish a GHG emissions statistics and data management system, and (5) to encourage low-carbon and green lifestyles and consumption patterns (NDRC, 2010). Since the central authorities have yet developed a policy model or framework for all the provinces and cities, their intention is to encourage the pilot regions to explore innovative policy measures as well as mechanisms for low-carbon development.

Among the five missions mandated from the NDRC, the low-carbon plans can be viewed as the basis of the low-carbon city pilot for local governments since it includes clear targets as well as key achievements and specific measures for reducing CO2 emissions, industrial structure adjustment, energy structure optimization (e.g. structural change), energy efficiency improvement and the increase of carbon sinks. However, the NDRC has neither provided a definition for a low-carbon city nor recommended specific guidance and methods on how to compile a low-carbon city plan (Khanna et al., 2014: 112-113). Hence, the knowledge gap of ‘low-carbon development’ in the bureaucratic apparatus increases the demand for external inputs from experts (Wübbeke, 2010: 9; Chen, 2017: 17).

(1) Experts’ involvement in China’s low-carbon planning and low-carbon city pilot: tales in Beijing
As mentioned earlier, before the NDRC promulgated the first batch of low-carbon city pilot, several INGOs and research institutions have built up collaborative work with some China’s local governments to undertake projects on constructing low-carbon cities. In fact, some academic institutions in Beijing were pioneering in disseminating the idea of ‘low-carbon city’ and the importance of compiling a low-carbon plan, for instance, the Chinese Academy of Social Sciences (CASS), National Center for Climate Change Strategy and International Cooperation (NCSC), Tsinghua University, and Renmin University of China. Additionally, some INGOs and NGOs also played a key role in the capacity building and policy formulation stage of low-carbon city pilot initiatives, for example, the aforementioned WWF, WRI, and the Climate Group, an INGO from the UK, and the Global Environmental Institute (GEI), an environmental NGO based in Beijing.
Similar to the case of GHG emissions inventory, the primary policy work of climate experts at Beijing is relatively high-end: to develop a conceptual framework and to identify key arenas and policy instruments for local governments to build up low-carbon cities. Meanwhile, some experts employed at the CASS, the Chinese Society for Urban Studies (CSUS), and the China Low-carbon Economy Media Federation (CLEMF), devote to establishing the assessment indicator systems for low-carbon cities (Interview 23 and 25). Considering these experts hold more authoritative expertise and knowledge regarding the development of low-carbon cities, the Climate Change Bureau at the NDRC has set up a database of experts (zhuan jia ku) to assist the central government. When reviewing proposals and reports submitted from local governments, i.e., the proposals for the low-carbon city pilot, central government officials will select experts who are in the list of the database to be member of the review committee or task force to assist the authorities with examining the climate policy-related materials (Interview 10, 17, 23, and 33).

Apart from the high-level policy work of the experts, another fundamental work is regarding capacity building—facilitating policy learning among local governmental actors and stakeholders. Since the 21st century, many institutions in Beijing have partnered with international organizations and funds, such as the Asian Development Bank (ADB) and the China Prosperity Strategic Programme Fund (SPF) supported by the UK Foreign and Commonwealth Office to organize training programs for local government officials and professionals (Interview 03, 29, 32, and 35). One notable collaborative work between China’s academic institutions and the INGOs is the reading material—\textit{Low-carbon Planning for Chinese Cities: A Manual for Policy Makers} (Wang et al., 2014), edited by the experts from Renmin University of China and the WRI. The compilation of this manual is based on the funding support from the Caterpillar Foundation and the NCSC under the NDRC (Interview 32). Some experts even claim that it is such institutions’ effort that stimulates the trend of building low-carbon cities in China (Interview 07, 13, 30, and 37). In addition, the Chinese NGO, GEI, has cooperated with the two institutions form the US: the Center for Climate Strategies (CCS) and the Regional Economic Model Inc. (REMI) to provide training sessions for local government officials and technicians (Interview 38).

In terms of the content and focus of the training programs provided by the climate experts in Beijing, their core mission is again, similar to the case of GHG emissions inventory—supplying the methodological toolkits for developing low-carbon policies, quantitative assessment and GHG emissions accounting models. In other words, rather than providing directly assistance with drafting a ‘customized’ low-carbon plan for local governments, the Beijing-based experts contribute to empowering local actors to plan and calculate for themselves. As an interview quotes a proverb from Huainanzi: “Show him how to fish rather than to give him a fish” (shou ren yi yu, buru shou ren yi yu) (Interview 38).
However, stressing more on guiding the local governments does not mean that climate experts at Beijing do not undertake the work for developing low-carbon plans for local governments. For instance, experts at Renmin University of China have assisted Qingdao (Shandong Province) with its low-carbon strategic plan based on the continuous cooperation supported by the Asian Development Bank since the last decade; the experts team provided substantial support to the core ideas and materials regarding the preparation work and proposals for applying the second batch of low-carbon city pilot (Interview 32). The WRI has assisted Chengdu (Sichuan Province) with compiling their low-carbon blueprints based on the project of ‘sustainable and livable city’ supported by the Caterpillar Foundation (Interview 33 and 34). Lastly, the experts group from the CASS has also assisted Guangyuan (Sichuan Province) with the compilation of low-carbon plans as well as the preparation work for applying the second batch of low-carbon city pilot (Interview 39).

(2) Experts’ involvement in China’s low-carbon planning and low-carbon city pilot: tales at the local states

Since the mandate of the NDRC instructs pilot candidates of provinces and cities subscribing to the low-carbon city pilot to develop low-carbon action plan detailing strategies for the deployment of low-carbon cities, the first and foremost task of local experts, is to draft a plan detailing how low-carbon development is to be achieved (Chen, 2017: 22). At the local level, it is quite common that experts employed at the public institutions or universities undertake the preparation work to draft the low-carbon plan for the government officials. At the provincial or city level, local government officials are inclined to establish a Low-carbon Research Center. If there are a group of experts at the universities or research institutions, an alternative of local governments is to co-establish the Research Center with the existing institutions (Interview 25).

For instance, the Tsinghua experts assisted the Beijing municipal government with the macro analysis and low-carbon planning regarding the population, economy, energy, and industrial arrangement in Beijing; concerning the low-carbon policy in the transportation and architecture sector, the Beijing municipal government commissioned the Beijing Transport Institute (the public institution under the Beijing Municipal Commission of Transport) and Beijing University of Civil Engineering and Architecture to further assist with the policy goals and administrative measures. In Guangdong Province, a number of institutions, including semiofficial institutions, universities, third-party agencies, and foreign institutions, formed a knowledge network that plays a vital role in Guangdong’s climate governance (Francesch-Huidobro and Mai, 2012; Mai and Francesch-Huidobro, 2015; Chen, 2017).

As a function of the Chinese governing system, a ‘plan’ (gui hua) can be viewed as a bargaining process comprised of ongoing negotiations among different governmental departments, both horizontally (between departments) and vertically (across scales) (Guttman
and Song, 2007: 423). In addition, the cross-sectoral nature of climate-related issues has posed new challenges to governments to compile with a low-carbon plan. While sorting the policy measures and targets, experts have to accumulate data regarding all existing ‘special plans’ (zhuan xiang gui hua) promulgated by different governmental departments (i.e., the Five-Year-Plan on Transportation). Meanwhile, the authorities also mandate experts to collect opinions from related industries and enterprises. Once experts have drafted a low-carbon plan, the officials issue the draft to all concerned governmental departments, enterprises, and academic institutions for commentary. The officials will then request further commentary through meetings of the Leading Group on Climate Change, and through joint sessions of the concerned departments (Chen, 2017: 22). This can be viewed as a process of intra-governmental communication, conflict mediation, and resource distribution (Mai and Francesch-Huidobro, 2015: 108). Before the final version of the policy document is generated, experts then have to process all the comments and solutions (Chen, 2017: 22).

While the mission of experts is to detail policy targets and measures forming part of the low-carbon plan, government officials are authorized to assign the responsibilities to relevant actors and to distribute these amongst the related departments. In accordance with the particulars in the respective policy papers, each department assumes responsibility for its own jurisdiction. As a feature of the ‘fragmented authority’ of China’s political system (Lieberthal and Lampton, 1992; Lieberthal and Oksenberg, 1988), unsurprisingly, parochialism and inter-departmental competition can also be found in China’s domestic climate governance. Since experts do not have the authority to coordinate co-operative governance, joint sessions with officials from different governmental departments and discussions with the leading group are vital to reach consensus on the final plan (Chen, 2017: 23). One informant further explains the lack of connections among the horizontal relations between governmental organs: although there are opportunities for experts from public institutions under different governmental departments to interact and exchange their ideas, the intersect does not exist for different governmental departments (i.e., the Development and Reform Commission and the Commission of Housing and Urban-Rural Development) before decision-making (Interview 35).

(3) Interactions between the experts at Beijing and experts at the local in the case of low-carbon planning and low-carbon city pilot

Although experts in Beijing are expected to hold much more expertise than local experts regarding how to deploy climate or low-carbon related policies in general, they inevitably lack understanding of the local due to the high heterogeneity of China’s territories. Hence, it is critical for experts at the central level to cooperate with experts at the local levels. In terms of the interaction between experts based in Beijing and experts at the local, when different types of institutions have experiences in developing collaborative work with local institutions,
the mode for collaboration varies. The experts from civilian institutions such as the WRI and GEI seldom contact and cooperate with local governments directly. Rather, after contacting with the local government officials (particularly the authorities at the Development and Reform Commission), they then cooperate more with local public institutions or research academies.

For example, when the WRI experts carrying out the project ‘sustainable and livable city’ in Qingdao, they mainly communicate with the Qingdao Engineering Consulting Institute (Interview 13, 33, and 34); at Chengdu, the institutions for cooperation are the Chengdu Academy of Economic Development, which is under Chengdu Municipal Development and Reform Commission, and the Sichuan United Environment Exchange (Interview 13). Considering that it is hard for NGOs to communicate directly with local governments without the assistance from local institutions, Beijing-based experts have to find the partnered institutions at the local (Interview 08 and 13).

On the other hand, the interaction between Renmin University of China and Qingdao demonstrates another mode of collaboration: rather than directly contacting the research institutions in Qingdao, the experts often interact with the Qingdao Municipal Commission of Development and Reform, and sometimes interact with local research institutions via the government officials (Interview 32). The reason why experts from Renmin University of China can contact the Qingdao authorities is that they have built up a stable partnership relationship with Qingdao municipal government to undertaking projects funded by international organizations for several years. However, compared with the common mode of collaboration that the Beijing experts cooperate with local experts, one expert from Renmin University of China said that since both sides have yet established a close relationship, the degree of cooperation between the Renmin University of China and Qingdao experts is not as expected by outside observers (Interview 32). Also, the collaborative work between the two sides does not imply the monopolization of Renmin University in carrying out low-carbon policy-related projects in Qingdao. In fact, the Qingdao municipal government can still commission projects to other local institutions regarding various issue domains.

To sum, when there exists different modes of cooperation between the Beijing experts and the local actors, there is one thing for sure according to the experts interviewed: strengthening personal connections (guangxi) with both the local government officials and research institutions or NGOs at the local is always important to optimize their projects (Interview 26, 30, 31, 32, and 33).
4. Discussion and concluding remarks

(1) Why are local governments looking for assistance from experts at Beijing?

The paper has successively presented the ways in which Chinese experts at the central and local levels engage with the policy work of China’s GHG emissions inventory and low-carbon city pilot. In this section, it steps to deals with an intuitive question that came out from the researcher’s mind: Why do local governments visit Beijing to look for assistance from the experts? Why not directly seek help from local experts? The answer to this question not only relates to the knowledge gap as well as the division of labor between the experts at the central and the local, but also indicates the political considerations of local cadres in China’s domestic climate governance.

Regarding the reason that local governments are inclined to ask them for assistance with the GHG emissions inventory and low-carbon planning, many experts consider their reputation and high-quality of research to be the foremost prerequisite; it is their expertise that convinces local government officials (Interview 20, 23, 32, 35, and 55). In fact, those research institutions which local governments pay a visit to seek for help are mostly institutions that used to provide training programs and technical instructions, or to organize conference for local participants to exchange their experiences. After learning a lot from participating in such activities, as well as being satisfied with the presentation by some particular institutions, local government officials may consider that it is suitable and valuable to further cooperate with some particular Beijing-based institutions to develop their low-carbon policies.

According to the expert who used to support Qingdao with its low-carbon planning, the advantage of Beijing-based experts is that they have both expertise and connections regarding the trend of international climate change negotiations, foreign experiences and cases of low-carbon cities, and China’s national policy directives at present, and can therefore provide suggestions for Qingdao to develop its grand strategies regarding its feature and status in Chinese mainland (Interview 32). Echoing this view, one interviewee who used to work at Guagyaun said that despite the fact that local experts have better understanding of the city, the Guagyaun government still has motives to invite investigation groups composed of Beijing experts because they can acquire suggestions from Beijing experts based on the judgment on how Guangyaun can build up its brand among all the low-carbon city pilots in China (Interview 39).

To relate this question to the political consideration of local cadres, it is reasonable that local governments contact climate experts in Beijing due to the expectation that the Beijing experts assist them with developing low-carbon policies which share the same logic of China’s national policies (Interview 36, 37 and 40). As an expert at Tsinghua University explained, “You can say that we have better understanding of how the central government
officials think of climate policies since it is our team provided them the policy-relevant knowledge and expertise before decision-making” (Interview 35). Hence, some local cadres believe that once they seek assistance from the Tsinghua experts, their low-carbon plan would be easier to coordinate with the central’s policy directives, standards and targets (Interview 35, 40, and 51). While local cadres do not familiar with the central’s policies, the assistance from Beijing institutions is hence critical.

Following the topic that local governments try to cooperate with Beijing institutions, the collaborative work between the Beijing experts and Chengdu is one intriguing case. Although served as the capital city of Sichuan Province and the major city in Western China, and has devoted to the preparation work of low-carbon city pilot for a couple of years, Chengdu has not been chosen by the NDRC for the first and second batch of low-carbon city pilots in 2010 and 2012. Noticing that the experts from Renmin University of China and WRI have released their efforts on developing a low-carbon planning for Qingdao, the Chengdu authorities expressed their interest in building collaborative relationships with Renmin University of China and WRI, expecting that the Beijing experts can give them a hand to promote its reputation in the domain of low-carbon city development. (Interview 32, 33, and 34). Since 2012, the two institutions have worked with Chengdu to undertake the project of ‘sustainable and livable city.’ When the project was completed in September 2016, the experts have done the study on Chengdu’s low-carbon development blueprint, particularly its urban water system in the water-energy relationship, and the analysis of the time for Chengdu to peak its carbon dioxide emissions. While the NDRC launched the candidate cities for the third batch of low-carbon city pilot in January 2017, Chengdu is the only one city in Sichuan Province that is selected by the central government. Although it is difficult to argue that the assistance of Beijing experts is the decisive factor to explain Chengdu’s selection by the central government, there is no denying that to a certain degree, the experts from Beijing institutions have contributed to lay the foundation for Chengdu’s low-carbon development (Interview 32, 33, and 34).

(2) Summary and concluding remarks
This paper aims to answer the question that how experts at different governmental levels work differently on the same policy, and how they interact or cooperate to carry out a policy project. Focusing on China’s climate policy, the paper found out that the two categories of experts focus on different aspects of China’s climate policies. As the case study on the GHG emissions inventory, Beijing experts emphasized on the rationale and framework of the policy and contributed to compiling the guideline and training the local government officials as well as technicians. Meanwhile, local experts stressed the practice of policy work and contributed to data investigation and calculation of the emissions inventory. In terms of the interaction or cooperation between the two categories of experts, the common mode of their
collaboration is that the Beijing experts provide methodological instructions and local experts undertake the actual work of compiling the emissions inventory.

When it comes to the case on low-carbon planning and low-carbon city pilot, this paper found out that similar to the case of emissions inventory, Beijing experts contributed to capacity building through organizing training programs for local actors, as well as the development of toolkits and instructions for low-carbon policies. On the other hand, experts employed at local research institutions devoted to sorting out policy measures and targets cross governmental departments and the compilation of low-carbon plan.

Following the previous discussion on the interaction between the central and local, this paper further asks that why local governments are looking for assistance from experts at Beijing. The answer to this question not only relates to the knowledge gap as well as the division of labor between the experts at the central and the local, but also indicates the political considerations of local cadres in China’s domestic climate governance.

To sum, while this paper contributes to comprehending the experts’ involvement in China’s policymaking on climate change, what leaves for future study is how the experts step further to assist government officials to move from ‘policy planning’ (policy text) to policy implementation (policy practice).

References
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