



China's low-carbon city initiatives: The implementation gap and the limits of the target responsibility system



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A B S T R A C T

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The Chinese government has promulgated a wide variety of low-carbon initiatives to control the rapid growth of energy consumption and carbon emissions in the cities. Past records, however, show that the central government's policies are often poorly implemented or distorted by local officials. Using a case study from the city of Changchun, this paper examines how and why the issue of poor implementation persists despite the establishment of the Energy Conservation Target Responsibility System (ECTRS). As a key institutional mechanism providing local officials with political incentives to implement low-carbon policies, the ECTRS has been constrained by a number of problems, including a poorly designed scoring system, weak targets, the use of energy intensity instead of absolute energy consumption as a policy objective, and the lack of reliable local energy statistics.

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Introduction

The dual concerns of climate change and energy scarcity are experiencing renewed political prominence and are reviving global interest in low-carbon cities (Bulkeley, Broto, Hodson, & Marvin, 2011; Chan, Choy, & Yung, 2013). This trend has been more evident in rapidly urbanizing China. Without a doubt, the expansion of China's metropolises has accelerated the country's energy consumption and carbon emissions. The 35 largest Chinese cities contribute 40% of China's energy uses and carbon emissions (Dhakal, 2009). The levels of per capita carbon emissions in many Chinese cities are now comparable or even higher than cities in developed countries (Wang, Zhang, Liu, & Bi, 2012). Facing tough domestic and international pressures, the Chinese government announced in 2005 that it would cut national energy intensity by 20% in five years (Zhou, Levine, & Price, 2010). This was followed by a pledge just prior to the 2009 Copenhagen Climate Summit to cut carbon intensity by 40–45% relative to 2005 levels by the year 2020 (Zhang, 2011). A wide variety of low-carbon policies has been developed in a short period of time to realize these ambitious energy and climate objectives (Lo & Wang, 2013).

A substantial amount of research has been conducted with respect to the design and development of China's low-carbon policies (Andrews-Speed, 2009; Kejun, 2009; Kong, Lu, & Wu, 2012; Lo & Wang, 2013; Price et al., 2011; Zhou et al., 2010); however, the

empirical studies concerning the implementation of these initiatives at the municipal level have been underwhelming. Although China is a unitary state by constitution, its local governments have gained considerable autonomy in *de facto* federalism since the reform period began in 1978 (Zheng, 2007). Consequently, Chinese policy implementation has become a contested process, and there are often disparities between policies on paper and their actual implementation, which is known as an implementation gap. It is not uncommon anymore for local Chinese governments to challenge the central government's order for the sake of local interests. Although no studies have closely examined the implementation gap of China's low-carbon policies, the media often report related anecdotes. For example, the Obsolete Capacity Retirement Program was unpopular among local governments because of the negative social and economic impacts associated with the forced closure of factories. Consequently, many local governments have been caught falsifying the production capacity of the factories that were closed down, or closing the same factory multiple times to claim extra credit.

These anecdotal accounts suggest that policy implementation can be a serious challenge to China's low-carbon city initiatives. There is an urgent need to examine the implementation problems to determine how they can be resolved. This study addresses this issue. Using a qualitative case study approach, we investigated the local implementation of three important low-carbon policies to gain a comprehensive appreciation of the issue and to identify patterns of implementation behavior across different policy areas. Evidence is drawn from both semi-structured interviews with local officials and policy documents. Our fieldwork was conducted in Changchun, the provincial capital of the Jilin province, from

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September to November 2012. Changchun was chosen as the site for the study because it is well known as an energy-intensive city because of both geographic and economic factors. Geographically, Changchun is located in Northeast China where winters are long and cold, and consequently space heating is a significant energy demand of the city.¹ Economically, the city has a high concentration of energy-intensive enterprises, especially in the automobile sector.² The scale of energy consumption in Changchun makes energy conservation and emissions reduction a pressing and challenging issue for the local governments.

Following this introduction, Section 2 explains the theoretical perspectives used in this study and discusses the previous research on the implementation of China's low-carbon policies. Section 3 introduces the three low-carbon policies that are targeted in this study. Sections 4 examine the implementation of the three policies and the presence of implementation gap in Changchun. Section 5 discusses the causes of the implementation gap, focusing on the limits of the Energy Conservation Target Responsibility System. Finally, Section 6 presents the conclusion and suggests possible solutions to closing the implementation gap.

Policy implementation

This study has been informed by policy implementation studies. Pressman and Wildavsky (1973) are often credited as having conducted pioneering work in the field of policy implementation. Implementation is a complex and contested process of "interaction, dialogue, feedback, modifying objectives, recycling plans, coping with mixed feelings and values, pragmatism, micropolitics, frustration, and muddle" (Nudzor, 2009: 502). Consequently, policies and practice are often disconnected. A substantial number of factors have been identified as influential with respect to policy implementation. O'Toole (1986) found over 300 variables in his literature review. The resulting complexity led to the call for structure by scholars like Matland (1995), who partitioned the variables into top-down and bottom-up paradigms. The top-down paradigm focuses on factors that can be manipulated by policymakers, such as organizational structures, monitoring, and evaluation. The bottom-down paradigm focuses on the realities that local implementers or street-level bureaucrats manage on a daily basis and how their experiences influence policy implementation (Lipsky, 1980).

Certain empirical research has examined the phenomenon of the implementation gap in China. Substantial implementation problems have been recently observed in diverse areas as such as the following: tourism policy (Wang & Ap, 2013), fisheries policy (Ferraro & Brans, 2012), environmental policy (Ran, 2013; Swanson, Kuhn, & Xu, 2001; Wang, Webber, Finlayson, & Barnett, 2008), one-child policy (Li, 2013), and renewable energy policy (Peidong, Yanli, Yonghong, Lisheng, & Xinrong, 2009; Schuman & Lin, 2012). In a development parallel to implementation studies elsewhere, a number of different but not mutually exclusive explanations have emerged. From a top-down perspective, O'Brien and Li (1999) argued that the implementation gap has become more common in the reform period because political decentralization and the end of political campaigns have enhanced local autonomy, and the target responsibility system is unable to enforce unquantifiable or immeasurable policy targets. Edin (2003) counter-argued that the central government can quantify and measure any policy target if it

is determined to see its implementation. Thus, the lack of enforcement should be interpreted as a lack of central intention rather than an institutional defect. Consistent with the principal-agent framework, Zhong (2003) demonstrated that the monitoring and enforcement system is vulnerable to cheating and corruption at the local level, a point that is also raised by Ran (2013) in her study of environmental policy implementation. Ran further argued that the central government provides perverse incentives for local officials' non-implementation or poor implementation of its environmental policies. Two scholars have introduced the time factor into the top-down implementation gap theory. According to Gobel (2011), the central government may opt to allow local governments to develop innovative policies that may result in a temporary implementation gap until the central government decides to enforce uniform implementation. Chung (2000) observed that because of the central government's record of frequent policy change, local governments are wary of the political and economic risks inherent in rapid commitment and therefore adopt a wait-and-see attitude, only committing to policy implementation when the center's preference appears to be fixed. With respect to the bottom-up paradigm, an increasing amount of studies show that local officials are unfavorably disposed toward implementing policies that are not conducive toward economic growth (Chan, Wong, Cheung, & Lo, 1995; Tang, Lo, Cheung, & Lo, 1997). Zhou (2010) contended that conflicting central directives and unrealistic expectations contribute to collusion among local governments to compromise central policies. Wang and Ap (2013) and Ferraro and Brans (2012) identified *guanxi* (personal relationships) between local officials and local entrepreneurs as a key factor affecting policy implementation.

The empirical research concerning the implementation of low-carbon policies in China is limited. Kostka and Hobbs (2012) conducted a qualitative study in 2010 on the implementation of energy efficiency policies in Shanxi province. Rather than focusing on the implementation gap, the authors examined the strategies employed by local governments to ensure proper implementation. Three approaches, policy-building, interest-bundling, and framing, were found to be effective in bridging national priorities with local interests. Policy bundling refers to the combining of energy efficiency policies with other policies that are more closely aligned with local interests. Interest-bundling is the linking of energy efficiency objectives with the interests of different actors, for example, the offering of compensation in exchange for compliance. Framing refers to the reinterpretation of energy efficiency policies with local interests in mind. Although Kostka and Hobbs did not directly address the implementation gap in low-carbon policies, the implications of their findings are that local officials are less inclined to faithfully implement low-carbon policies that are not consistent with local interests.

Introducing the low-carbon policies

The three low-carbon policies we focused on are: the Ten-Thousand Enterprises Energy Conservation Low Carbon Program (hereafter, Ten-Thousand Enterprises Program), the Northern Heating Region Existing Residential Building Energy Conservation Retrofit Program (hereafter, Building Retrofit Program), and the Ten Cities Thousand Cars New Energy Vehicle Pilot Program (hereafter, Thousand Cars Program). As shown in Table 1, these three national low-carbon policies are different in terms of targeted sectors, policy instruments, objectives, and responsible ministries. In this section, we briefly introduce the three policies with a focus on the implementation process.³

¹ Changchun has one of the longest winter heating seasons in China, lasting 174 days. The winter temperature in Changchun regularly drops below -20°C .

² In 2010, Changchun's 28 automobile manufacturers and 416 parts suppliers produced 1.7 million vehicles, or one-tenth of the vehicles produced in the country. Overall, the car industry accounts for 63% of the city's gross industrial output.

³ For a comprehensive overview of China's low-carbon policies, see Lo (2014).

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