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Environmental regulations and emissions trading in China

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ABSTRACT

This paper begins with the international context concerning climate change and how China fits into this context. Concentration is then turning into the emissions control system in China including environmental planning, legislation, policy instruments and measures as well as institutional setting in China's environmental governance system. Special attentions also being paid to emissions control in China's power sector. It should be noted that the pollution discharge permit system in China only exists superficially in many places. Insufficient resources are applied to the implementation of the said permit system, which in turn means that the system is applied according to differing standards in different parts of the country. The findings of this paper suggested that emissions trading programmes are usually introduced alongside the existing policies. The power sector usually has numerous other policy objectives and therefore the design and implementation of emissions trading programmes in the sector will have to address concern about the compatibility of existing industry policies.

1. Introduction

The United Nations Climate Change Conference was held in late 2009 in Copenhagen, Denmark. While addressing the issues of climate change, many concerns have been expressed, many promises have been made, but concrete action is what counts. The existing legal governance framework set by the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, faithfully abiding the principle of "common but differentiated responsibilities" (Birnie and Boyle, 2002; Sands, 2003). The aforementioned international legal instruments are reflecting global consensus, providing a basic legal framework, and serving as a foundation for international negotiation. China signed both the UNFCCC and the Kyoto Protocol and subject to transfer these international obligations into its domestic laws and practices.

As the biggest developing country in the world, China fully recognises the significance and urgency of addressing climate change issues, and has made great efforts on its own initiative. These new initiatives can be observed from two aspects: firstly, law and policy measures; secondly, environmental governance in practice. From a legal and policy aspect, the efforts can be traced back as early as 1995, the Chinese government decided to transform its economic pattern toward technological innovation with reduced consumption of resources and costs of energy. In the late 1990s, the governments in China at different levels had shown increasing interests on using the instrument of emissions trading. The central government repeatedly advocated using emissions trading to reduce emission from power plants in its Five-Year Plans. At the local level, some provinces even spell out plans of implementing emissions trading with more details. Governments of Guangdong, Shandong and Jiangsu have already issued relevant documents to launch regional programmes for their power industry (Chen, 2009). Entering the 21st century, China adopted a long-term policy in order to achieve a comprehensive, coordinated and sustainable way of development. The Chinese government issued its first Building Energy Construction Regulations in 2005, although it is less strict than the similar western regulations (Wang et al., 2009). In 2007, a National Climate Change Programme was launched, the first among the developing countries. In October 2008, a white paper entitled China's Policies and Actions for Addressing Climate Change was published. In August 2009, a draft resolution on climate change was approved by the law-making body in China (China Daily, 2009).

In practice, between 2006 and 2008, China shut down inefficient thermal power plants with a total capacity of 34.21 GW (gig watts), and closed 6028 small coal mines. In 2007 alone, renewable energy contributed to 500 million tons of CO_2 emission reduction. From 2000 to 2008, China installed the wind power capacity increasing from 340 MW (megawatts) to 12 GW, ranking fourth in the world. In the meantime, the hydropower increased from 79.35 to 172 GW, the highest worldwide (Lv, 2009). In the 30 years of reform and opening up,

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China's GDP hit an annual growth of 9.8 percent, while energy consumption per unit of GDP decreased by 4 percent per year. Even during the recent global economic crisis, the government demonstrated its firm determinations to address the climate change issues. For example, the Chinese government has recently launched a 4-trillion-yuan ($586 billion) financial stimulus package, among it 350 billion yuan was channelled into environment and climate-related industries (China Daily, 2009).

In addition to the above facts, the concept of emissions trading is relatively new in China and the implementation of emissions trading programmes is still at an experimental stage. However, the legal system to control emissions from the power sector has long existed. Any new policy instrument needs to operate within the existing system, ultimately becoming a part of and functioning together with its other components. The case of emissions trading is thus no exception in this regard. China's environmental law system was born out of socialist planning, and had evolved in the course of China's transition to a market-oriented economy. The system is now vigorously developed, accommodating multiple layers of law-making bodies and executive agencies as well as policy instruments and measures of many kinds (Zhang and Wen, 2008).

Moreover, the Chinese government as well as researchers and practitioners in the industry have already made considerable efforts to study the mechanism of emissions trading and to devise appropriate mechanisms to make it work in China. In fact, several pilot projects were implemented in the past 10 years or more, and some of the existing policies, such as the "Total Loading Control" framework, have laid a solid policy foundation for the introduction of emissions trading in China. All these elements comprise the background to the introduction of emissions trading in China's power industry and are thus reviewed in depth in this paper.

The paper starts with an introduction on emissions control system in China including environmental planning, legislation, policy instruments and measures as well as institutional setting in China's environmental governance system. Special attentions also being paid to emissions control in China's power sector. The paper then reviews the efforts that the Chinese government has made to date to introduce emissions trading in China. Emissions trading policies, regulations, pilot programmes and their practices are also examined. The last section of this paper discussed what lessons can be learnt from the efforts of introducing emissions trading in China. All of the aforementioned will be detailed in the following part.

2. Emissions control in China

Controlling emissions in China's power sector is within the context of the country's overall emission control system. Therefore, this section firstly reviews the emissions control system in China, which consists of environmental planning, environmental legislation, policy measures and instruments as well as their institutional setting. The section then discusses the legislation, regulations, and policy measures that are particularly imposed to China's power sector. Environmental components of the regulatory system in the sector are also discussed.

2.1. Emissions control system in China

China's emissions control system is within its environmental law framework, which is made up of four pivotal components, namely environmental planning, environmental legislation, policy instruments and measures, and institutional arrangements. Any environment protection system in China, including emissions control, is established on the basis of these components of the framework.

2.1.1. Environmental planning

The Chinese government develops a Social and Economic Development Plan every five years, which is commonly known as a Five-Year Plan (FYP). The plan coordinates public policy priorities and lays down the development objectives. Based on the FYP, the Chinese environmental authorities prepare a corresponding Five-Year Environment Plan, which include detailed plans addressing specific environmental issues. The aforementioned plan provide the objective and measures of dealing with the country's key environmental issues, such as water management in key rivers and lakes, hazardous waste management, nature conservation, and reduction in air pollution in specially designated regions. Subsequently, provincial and local governments embody the goals that set in the national plans in their own five-year environment plan at the sub-national level.

The national plan started to set national emission control targets from the 9th FYP (1996–2000). The 9th FYP selected 12 key pollutants and set the limit of aggregate quantity for each of them. It is also known as "Total Load Control." The 12 key pollutants identified, included three atmospheric pollutants, namely SO_2, soot and industrial particles. The 10th FYP (2001–2005) set a clearer quantitative target. For example, it stipulated that the national total SO_2 emissions should be reduced by 10% in 2005 and the total SO_2 emissions in two designated control zones should be reduced by 20%. Most recently, the State Council set out the 11th FYP for Preventing and Controlling Acid Rain and SO_2 emissions, setting a target of 10% reduction in SO_2 emissions from the 2005 level by 2010. It is important to note that China's emissions control programme focus specifically on SO_2 rather than targeting at greenhouse gases and carbon dioxide as a whole. This is due to the fact that China's energy structure is mainly based on coal-fired power plants and coal mines in China contains very high degree of sulphur. As a result, the air in China generally contains high degree of soot and SO_2, which subsequently leading to acid rain (Xu, 2005; Zhou, 2006; Lv, 2009). Based on the above, it is not difficult to conclude that China is taking a more regional approach in dealing with emissions control instead of an international way of thinking (Chang, 2009).

2.1.2. Environment legislation

Since the first enactment of the Environmental Protection Law in 1979, China now has altogether had 7 major laws concerning environmental protection[1] (Table 1 lists all the environmental laws in China). Four of these laws can be employed to regulate emissions from power sector including Environmental Protection Law, Air Pollution Prevention and Control Law, Environmental Impact Assessment Law, and Law for Promoting Clean Production.

2.1.3. Policy instruments and measures for emissions control

Apart from legislation, there are a number of policies and measures that serve China's pollution control activities. Some of these policies and measures were adopted for the generic purpose of environmental protection, whilst some others were issued to specifically control emissions. In essence, there are three major pollution control policies in China, namely the "Three Synchronisations Policy", "Environment Impact Assessment" and "Pollution Charge". These measures exert their effect to the power sector in different ways. Power projects are required to integrate environmental concerns at all stages of the project, from design, to construction, to operation, under the "Three Synchronisations"

[1] These 7 major laws concerning environmental protection are: Environmental Protection Law; Law on Marine Environmental Protection; Law on Water Pollution Prevention and Control; Law on Air Pollution Prevention and Control; Law on Solid Waste Pollution Prevention and Control; Radioactive Pollution Prevention and Control Law; Environmental Noise Pollution and Prevention Law.