Problems on the Transaction Integration of Air Pollution Emission in 'Dianzhong' Economic Zone

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Abstract: In 2008 proposed the establishment of planning 'Dianzhong' Economic zone. In March 2011, Kunming city and Qujing City, Yuxi City, Chuxiong signed a "framework agreement" to promote the development of integration and cooperation. The construction of the economic zone in Central Yunnan to take substantive steps. Space planning includes the central Yunnan Province, Kunming City, Qujing Province, Yuxi city and Chuxiong City, and extended to the North (Mengzi, Honghe Gejiu, Kaiyuan, Maitreya, Jianshui, Luxi, Shiping seven counties) composed of economic circle. The land area of 114600 square kilometers, accounting for the province's land area 29%. In 2012, at the beginning of the establishment of the 'Dianzhong Economic zone, the economic zone has 65.56% of the total production value, 66.1% of the total local revenue, 67.54% of the total retail sales of social consumer goods, 56.19% of the total investment in fixed assets and 80.49% of the total import and export of goods, 44.06% of total population and 29% of the territory of the whole province. And 8.63% of the industrial added value. The area includes key industrial such as metallurgical processing zone, petrochemical zone and new coal-based zone in Yunnan. In 2016, the industrial added value above the scale in the economic zone accounted for 81% of the province's industry. The emissions of sulfur dioxide, nitrogen oxides, particulate matter and volatile organic compounds accounted for nearly 50% of the total in the province. Promoting the joint prevention and control of air pollution in 'Dianzhong' economic zone and establishing regional air pollution emission trading mechanism will be a new way to control the emission of air pollutants from the total amount. This paper will analyze the problems of air pollutant emission trading in 'Dianzhng' economic zone and put forward relevant countermeasures and suggestions.

1. Introduction

1.1 Cement industry

Particulate matter emissions from cement industry account for 15%-20% of the national particulate matter emissions, of which PM10 accounts for 80%, SO2 accounts for 3%-4%, and NOX accounts for 10%-12%. It has been the key industry of energy saving and emission reduction. 1949~2016 years, Yunnan total cement production 10 tons, accounting for 3.08% of the total. From 2001 to 2016, Yunnan cement industry was developing rapidly. It produced 840 million tons of cement, accounting for 84.25% of the total (79.29% of the whole country), which was 5 percentage points higher than that of the whole country. From 2011 to 2016, 530 million tons of cement were produced, accounting for 53% of the total, which means that the output of cement in six years exceeded the total output in the past 62 years. From June to August 2018, the cement output of Yunnan Province declined. In August 2018, the cement output of Yunnan Province was 8.525 million tons, an increase of 2.95% over the same period last year. From 2012 to 2016, the average annual cement consumption increased rapidly, reaching 2 tons per person year, which is higher than the national level of 1.7 tons per person year. 2012~2016 years, the rapid rise of annual cement consumption, reaching 2 tons per person per year, higher than the national level of 1.7 tons / year.

From 2009 to 2012, the fastest growth period of new production capacity was found, with 49 lines completed and put into operation, and clinker production capacity of 39.59 million tons, with an average annual growth of nearly 10 million tons, accounting for 40.66% of the total production capacity. Among them, there are 40 production lines of 2000-3999t/d scale, with clinker capacity of

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31.47 million tons, accounting for 79.48% of the production capacity; 4 production lines of 4,000 t/d scale, with clinker capacity of 5.89 million tons, accounting for 14.88% of the production capacity.

From 2013 to 2016, 21 production lines with clinker capacity of 23.87 million tons have been completed, including 11 production lines with clinker capacity of 9.3 million tons in 2000-3999 t/d and 10 production lines with clinker capacity of 14.57 million tons in 4000 t/d and 61.04% in capacity.

In Yunnan, the number of production lines and clinker enterprises ranks first in the country. In comparison, production scale, market control of large enterprises in the process of formation, the concentration of production capacity is not high.

Yunnan appeared 3 times scale integration. For the first time, in 2007, Lafarge; for the second time, in 2012, Southwest Cement and Kunming Steel Cement; and for the third time, in 2015 and 2016, Huarun and Kunming Steel cooperated to restructure Lafarge in Huaxin.

As of 2013 Yunnan province cement factory has 277, 4 years after the rectification, in 2017 there were 73. Among the top 10 enterprises, 8 are concentrated in 'BIG Kunming' (Kunming, Qujing, Yuxi), 6 in southwestern Yunnan (Baoshan, Dehong, Lincang), 4 in northwestern Yunnan (Diqing, Nujiang, Lijiang, Dali) and southeastern Yunnan (Honghe, Wenshan), 3 in southern Yunnan (Puer, Xishuangbanna), and 2 in northeastern Yunnan (Zhaotong). If divided by the'Dianzhong' Economic Zone, then the top 10 enterprises of 9 have set up factories in this Economic zone. According to the 2017 third quarter of key enterprises in Yunnan Province supervision and inspection list, Yunnan Economic Zone 27 cement plants, of which only 11 tested 1 sulfide emissions standard.

1.2 Steel industry

Iron and steel metallurgical industry is a major emitter of air pollution in China. Some of the main processes in its production process consume a lot of resources and energy. The quantification of pollutant emissions is relatively large, which is one of the important factors causing regional air pollution problems in China.

The process of iron and steel industry pollutants emitted from the production process is complex, many kinds of pollutants, ＳＯ２, NOx, smoke and dust, ＰＣＤＤｓ／ＰＣＤＦｓ, vapors and VOCs, in addition to a large number of emissions of greenhouse gases (ＣＯ２ CEU, etc.)

From 2008 to 2015, the GDP growth rate of Yunnan Province was faster than that of the whole country. The output of crude steel increased from 9.013 million tons to 14.181 million tons. In 2013, the output of crude steel reached a peak of 18.839 million tons, accounting for 1.8% to 2.4% of the whole country. Yunnan crude steel output increased by 15.89% annually from 2008 to 2013, which is 1.73 times that of the whole country. With the aggravation of global and domestic excess iron and steel production capacity and the decline of steel prices, the annual growth rate of Yunnan crude steel declined by 13.24% from the rapid expansion period to the contraction period in 2013 to 2015. In the first quarter of 2016, the crude steel output increased by 0.8% compared with the same period last year, and slightly increased.

Among the 22 iron and steel plants in Yunnan, 19 of them operate in the central Yunnan economic zone, accounting for 86%. According to the automatic monitoring data of the state key monitoring enterprises in February 2018, 1# dust of converter in Yuxi Xinxing Iron and Steel Co., Ltd. (38.34), 8# boiler in Guodian Xuanwei Power Generation Co., Ltd. (1659.7095 mg/m) and sulfur dioxide emission of 12# boiler exceed the standard by 2 times (530.62), and 12# boiler exhaust of power plant in Yunnan Desheng Iron and Steel Co., Ltd. The sulfur dioxide and nitrogen oxides in the radioactive materials exceeded the standard three times and two times

1.3 Thermal power

At present, there are 11 thermal power enterprises in Yunnan Province, which are Huaneng Yunnan Yundong Energy Co., Ltd. Yunnan East Yunnan Power Plant, Guodian Kaiyuan Power Generation Co., Ltd., Guodian Xuanwei Power Generation Co., Ltd., Guodian Yangzonghai Power Generation Co., Ltd., Dongyuan Qujing Power Generation Co., Ltd., Yunnan Datang International Honghe Power Generation Co., Ltd., Yunnan Yunnan Yunnan Yunnan Yudong Yuwang Energy Co.,

Ltd., and Yunnan Huadian Kunming Power Generation Co., Ltd., Yunnan Huadian Power Patrol and Inspection Division Power Generation Co., Ltd., Yunnan Huadian Zhenxiong Power Generation Co., Ltd., Yunnan Nengtou Weixin Energy Co., Ltd. Ten of them have built factories in the ‘Dianzhong’ Economic Zone.

According to the IPCC carbon emission coefficient method and the energy consumption of Yunnan Province in the Statistical Yearbook of Yunnan Province, the energy consumption carbon emissions of Yunnan Province can be calculated. From 1980 to 2016, the carbon emissions and economic development of Yunnan Province showed an upward trend, reaching a peak of 180 million tons of carbon dioxide in 2012. The carbon emissions of power generation in Yunnan Province are always an important part of the total carbon emissions of Yunnan Province. The proportion of carbon emissions of power generation is always between 33% and 40%. It is of great significance for Yunnan Province to carry out low-carbon transformation of power generation industry to control carbon emissions.

The carbon emission coefficient of thermal power shows a fluctuating trend. The highest is 147.5 million tons of carbon dioxide/gigawatt-hour in 2005, the lowest is in 2009, falling to 129.9 million tons of carbon dioxide/gigawatt-hour, and the coefficient in 2016 is slightly higher than the 10-year average of 132.3 million tons of carbon dioxide/gigawatt-hour. From 2005 to 2016, the carbon emission coefficient of thermal power in Yunnan Province is higher than that of the whole country in the past 20 years. There is still much capacity for energy saving and consumption reduction of thermal power in Yunnan Province.

2. Challenges in Establishing Emission Trading Market in ’Dianzhong’ Economic Zone

2.1 The supporting system of relevant laws and regulations is imperfect, and the design of trading system is immature

China's emissions trading system lacks a guiding fundamental law. Although all pilot areas have formulated or are in the process of formulating Interim Measures for the management of paid use and trading of pollutant discharge rights, at the national level, there are no specific laws and regulations at present, except the Guidelines for Further Promoting the Pilot Work of Paid Use and Trading of Emission Rights issued by the General Office of the State Council on August 6, 2014. Laws and regulations are not perfect, not a unified lead to emissions trading cannot run smoothly. Due to the lack of guidance at the national level, there are great differences in the formulation of management methods among local pilot projects. Due to lack of unified supervision at the national level, the pilot management approach in the definition of the pollutant index, price and trading range, there are great differences.

At present, the pilot areas are actively exploring innovations in the form of emission trading, but the design of trading system lacks rationality. Because of the imperfect trading system, some traders deliberately drill the loopholes of the system in actual transactions, and many irregular operations have occurred. In addition, there is a big difference between the current trading system between different regions, the "one system" problem that questioned the fair trading emission rights.

2.2 Initial distribution is unfair and pricing methods are not uniform

The initial allocation of emission permits lacks fairness and flexibility. The initial distribution in many places follows the concept of "equality is fairness". All regions, industries and enterprises distribute according to the same standards. In the old enterprise of emission system is determined before the establishment of the early in the free emission rights, compared to the new enterprise has obvious advantages, and in the later period of all enterprises in the same price to obtain emission rights, the "equal" actually is not fair. Moreover, for different industries and enterprises, "no discrimination" can not motivate enterprises to reduce emissions, and even there will be a "whipping cattle" phenomenon.

On the other hand, paid allocation involves pricing. At present, the pilot areas have formulated paid allocation methods and pricing methods, and many places have published the guiding prices of

major pollutants. However, the pricing guidelines are "regional" and vary widely among regions, which often fail to properly reflect the scarcity of environmental capacity. The prices of pollutants trading vary greatly from place to place. For example, the guideline price of sulfur dioxide emission right in Shanxi is 18,000 yuan/ton, and the pollutant discharge index is valid for a long time, while that in Chongqing is valid for one year, and the annual price is about 1,000 yuan/ton.

2.3 No active secondary market

Current emission trading is usually divided into primary market and secondary market. The former is carried out between government and enterprises, such as initial allocation of emission rights, government repurchase, etc. The latter is quota trading between enterprises. The pilot case shows that there was zero trading in Yunnan Carbon Emission Exchange.

Local governments have "excessive interference" in emission trading. In order to take into account the development of local economy, the government has stipulated more restrictions on enterprises'emission trading in the region, such as only trading in the region, government control of transaction prices, etc. Because of the existence of such "protection", it is difficult to establish a market-oriented mechanism, and the vitality of the secondary market has been curbed. At the same time, local governments pay more attention to the development of the primary market, cultivating the secondary market awareness is not high, affecting the development prospects of the secondary market.

3. Summary

Based on the above analysis of pollutant emission and emission trading in the ‘Dianzhong’ Economic Zone, it can be concluded that it is necessary for the ‘Dianzhong’ Economic Zone to gradually promote air pollutant emission trading to alleviate environmental pollution.

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