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A Comparative Study on Carbon Emission Trade System Between China and US

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Abstract: It has been years since the Paris Agreement and most states are still struggling with their goals to reduce the carbon emission. Many ways and measures are taken but few show effectiveness. Because the industrial development and daily lives of the common people count on the activities that emit much carbon dioxide. Most governments are reluctant to restrict the carbon emission of local industry. What's more, in the international level, the developed countries refused to take all reduction responsibilities based on their historical emission volume. While the developing ones are eager to pursue more progress in industry. To overcome such difficulty, the market-orientation carbon emission regulations are created to tackle with the challenges that the normal order-control regulations cannot deal with. In contrast to the carbon tax that is more direct and obvious, the carbon emission trade system is favored by both China and US. The system of carbon emission trade system is much younger and less experienced than it is in the US. The comparative study on the carbon emission trade system needs to be done to find more possible solutions to improve the current carbon emission trading system of China. In the paper, main research method is the comparative research and system analysis. In conclusion, the carbon emission trade system of China is relatively immature, lacking the legal support and clear regulations. The carbon emission trade system in China needs stronger laws to support, achieving more active flexible form of trading. The central and local governments should also provide the proper policies like open auction and third-party supervision.

Keywords: carbon emission trade system, carbon emission right, RGGI

1. Introduction

After the United Nations Climate Change conference in Copenhagen, there was an impressive interview broadcasting on CCTV that caused many debates and even discords among the public. The bone of contention focused on the obligation to restrict the carbon emission of developing countries. While the interviewer, a famous hostess, questioned why it would take such effort to accept these duties. The interviewee, a leader of Chinese Academy of Science strongly reputed her idea and pointed out that these obligations would have great impact on the rights to develop in the future. The controversy is, in fact, quite simple that whether the carbon restriction is a scam to deceive the developing country into giving up their own rights.

Nowadays, the carbon neutralization and emission peak have become a vital part of China's national policy. Many laws and regulations have already been made after the publishing of central

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government's documents on the relative issues. Yet even after all those important measures taken in few years. There are still some practical matters to concern like the lack of united system and law base to manage and supervise the carbon emission trade system. To search on the China Judgements Online by the phrase Carbon Emission, the only result of administrative proceedings is the case that an industrial company was charged and fined for not paying for the over-emission carbon quota in Shenzhen.

To look at a bigger picture, the only country that has the obligation to restrict its carbon emission in such scale and face the challenges for matched population and industrialization is the United States. It would be necessary to have a comparative study on both states' laws and regulations on carbon emission trade system.

2. The Legal Attribute of the Carbon Emission Right of China and US

2.1. Theoretical Debate on the Legal Attribute of the Carbon Emission Rights

About the legal attribute of the carbon emission rights, the theoretical debate focuses on whether it is quasi real right or administrative licensing. Clearly the corresponding duty of carbon emission right is to reduce the carbon emission, which is an obligation under the international treaties and domestic law. Yet the increasing need to control the carbon emission emphasizes the necessity to recognize it as a real right to avoid the tragedy of the commons. There are Chinese scholars on both sides.

The foundation of the carbon emission right in China resembles that in United States, deriving from the pollution emission right. Some scholars point out that the carbon emission obligation bases on the environment capacity theory [1]. That leads to the scarcity of its corresponding right. Despite of the publicity of it as a kind of resource, it needs to be set as a real right to clarify the property boundaries between people. In this way, the carbon emission right could be seen as a tool to prevent the so-called collective irresponsibility. It would also help the government to manage the carbon emission trade system, even create economic interest.

Unfortunately, lots of problems need to be dealt with before confirming it as a real right. The right in rem needs to follow the rule that every category being listed in official law in the system of civil law. It's hard to expect that to be fulfilled in a short term for all kinds of real right (and their corresponding duties) relate too much in current law. What's more, the carbon emission right bases on the environment, which is hard to be regarded as the objective of right in rem. In other word, such right of natural environment lacks the exclusiveness required in right in rem. To correct this, some argues that the carbon emission right should be recognized as an usufructuary right [2], but that did not solve the problem that it is difficult to separate the carbon emission right from the public environment as an independent object.

The compromise does not satisfy, bringing us back to the start point that the carbon emission right is an administrative licensing. According to the UNFCCC and the Kyoto Protocol, the carbon emission obligation is the need to assure the environmental capacity and being assigned to states. Supported by the domestic laws and regulations, the emission under the capacity is legal and rightful. The administrative licensing is the assurance and effective tool to manage the emission goal. Such right pertains to be subjected to the level of state since it is the natural environment obligations assigned by the international treaty. Besides, the ultimate purpose of the carbon emission trade system is to tackle with climate change and reduce the emission. The aims of update the industrial structure and create more economic interests subordinate to the former one. The total volume of carbon emission must be lowered gradually in the future, so as the right. If the carbon emission right is property right or right in rem. There will be plenty of troubles in administrative expropriation and administrative compensation [3]. To the contrary, the carbon emission right based on the

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administrative licensing is much easier to be managed to guarantee the gradual reduction of carbon emission, reaching the promise of the state.

2.2. Laws and Regulations on the Legal Attribute of Carbon Emission Right of China and US

Though it has been discussed thoroughly in the academic aspect, there is no official law on the carbon emission trade system approved by the People's Congress. Till now, the highest legal document of this section is Administrative Procedures for Carbon Emission trade system (drafted) published by the Ministry of Ecology and Environment. In the Article 33. Explanation of Terms, the carbon emission right is defined as the carbon emission quota assigned to the specific emission units in prescribed time. The official explanation states that the carbon emission right is rooted in government management and supervision, basically equals the concept of administrative licensing of China.

The US Energy Law (2010) prescribed that United States would implement the national system of emission quota and emission licensing trade from 2013. The Clean Air Act (1990 amendment) Chapter 4. states that quota is the licensing to emit sulfur dioxide, not a property right. The Climate Security Act Chapter 2. also claims that any emission quotas should not be property rights. Meanwhile, the Environmental Protection Agency has been authorized to halt or reduce the emission quota, whose authority should not be limited by any other laws or regulations [4].

3. The Carbon Emission Trade System of China and US

3.1. The Current Regulations on the Carbon Emission Trade System of China

The carbon emission trade system regulations of China are perfected gradually in recent years. Yet there is no official law of carbon emission trade system passed by the congress till now. The current highest legal regulation is the Administrative Procedures for Carbon Emission trade system (drafted) published by the Ministry of Ecology and Environment. After the carbon emission trade systems were experimented in serval cities like Beijing, Shanghai and Shenzhen, the local laws and regulations were made to cover the vast ground of carbon emission trade system. The recognized public carbon emission trade systems for registration were also founded in those cities, achieving considerable total trading volume. With the first national administrative procedure, the carbon emission trade market has come to the new era of unity.

According to the Administrative Procedure, the emission unit has the duty to make the emission report based on the technical regulations every year, being responsible to it. And the report should be made public except for the parts relating to the national or trading secrets.

The total carbon emission volume is decided by the Ministry of Ecology and Environment, and then being distributed by the provincial administrative department. The administrative procedure prescribes that the exact distribution to the emission units ought to be gratis. But it makes the reservation that paid forms could also being introduced when the state is necessary to do so. Such arrangement comes from the practical experiments in Guangzhou and Shenzhen. The paid parts were significantly smaller than the gratis parts since the most emission are created by the inflexible industry like energy. Furthermore, the limited paid parts raised the fund to support the district low-carbon foundation. It has been proven to be a guide outside the normal system.

Besides, the administrative procedure states that the provincial administrative department would supervise the reports of emission volume. The emission unit could have the offset of emission quota by voluntary emission reduction, which encourages the emission unit to take efforts to make cut.

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3.2. The Laws and System on Carbon Emission Trade System of US

The United States of America is the first country that use the market-orientation regulations to tackle with environmental challenges. It has the experience to control acid rain, smoke and other pollutants for over 30 years [5]. Yet the complex political environment of US leads it to a variable issue. Generally, there are two major directions, centralized and decentralized federalism. One of the most successful measures of centralized federalism of environment issue is the rule of the final obligatory report on greenhouse gases based on Clean Air Act by the Environmental Protection Agency, which also prescribes that the carbon dioxide is under the Clean Air Act like other pollutants. However, Trump government adjusted the policies greatly after 2017. The new commissioner of Environmental Protection Agency, Scott Pruitt is a firm cooperation federalist of environment. According to the Back-to-Basics Agenda, the administration creed of this commissioner, the Trump government canceled a great deal of regulations made in the Obama government period such as the application of SCC, pulling back to the areas of federal management in advance. What's more, the government pursued closer cooperation with states, distributing power to the lower levels. Though the new democratic government is turning the odds to some extents, many vital systems have already been changed permanently.

The Regional Greenhouse Gas Initiative (RGGI) is the first reduction and trading project for carbon emission in US. It did not just bring an income of 2.7 billion dollars by the auction of emission quota, but also create thousands of green jobs by pushing for more healthy industry system. Unexpectedly, the reduction of carbon emission did not have an impact on the local economic growth. In fact, the economic growth rates of RGGI area are averagely 4.3% higher than the non-RGGI area. More importantly, the profits gained by the carbon emission trade system are asked to invest further improvements and other related measures. That is the core structure of this sustainable system. Either considered integrally or separately, just like projects of California, the RGGI is no doubt the most successful sample for comparative study [6].

The memo signed by the member state provides the basic rules and structure of RGGI. To assure the daily run, every state assign two representatives as the members of the executive board. The Model Rule are made by all members, including the unified emission standard and project's structure. To stabilize and reduce the carbon emission, the regional organization focus on the local laws of each state aiming at the power plants to reduce the carbon emission.

The total carbon emission volume is decided by the regional organization, and then being distributed to the member states by the proportion regarding the historical emission volume. Yet the specific emission volume needs to be confirmed by the domestic law of each state, containing under the total volume given by the RGGI of course. And the state's environment agency would supervise the units' emission status. After the quota is set, the auction would be held in public. No restriction on the subject qualification or the form of subject matter. Yet it limits the quota of a single buyers within the 25% of the total volume. Though every state maintains the authority to supervise the auction, the supervision is, in fact, performed by the third-party institution Potomac Economics.

Every three years as a period, the emission unit ought to submit the quota based on its carbon emission volume. Surprisingly, during the first period of RGGI, the actual emission volume is outnumbered by the total volume decided by the regional organization. The consequence is severe that the price of carbon faced great decline, contributing to the low activity of the trade market. The fundamental goal of the system, reduction of carbon emission, failed completely. To correct it, the annual emission quota is cut greatly. Within the 2014, the total volume was reduced by 45%, and was required to decline by the annual rate of 2.5% since 2015. Eventually, it has been proven effective by the fact that the RGGI meets 90% of its total volume and creates 1.3 billion pure profits for three

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periods. Decisively, the power of RGGI member states relied on coal and oil is reduced from 33% to 7% within 11 years [7]. It would be safe to conclude that the RGGI fulfilled its destiny perfectly.

4. The Comparison of Carbon Emission Trade System and Revelation

4.1. The Legal Obstacles of Carbon Emission Trade System' s Regulation of China

The most significant problem of current carbon emission trade system of China is the low level of legal documents on the regulations. For example, the carbon emission trade systems of most cities depend on the local policies and official documents, lacking the support of national laws. Beijing and Shenzhen are the few cities that own the specific local laws to regulate the carbon emission trade system. It might seem that compared with the system in US, China has sufficient local laws and regulations for carbon emission trade system. Yet a vital fact needs to be taken into consideration as well that policies and regulations in China highly relied on the support of central government, in other word, the official law confirmed by the people's congress. In fact, even local laws have much more benefits than policies in many ways such as the authority to set up penalties and the access to create substantial rights.

To the contrary, the MOU of RGGI assures the Model Rule of different member states without an over-states law. The Model Rule would facilitate the legislation of member states on the systems of quota distribution, offset and penalties. Moreover, the RGGI has a united trading market, a united quota management platform and a united auction institution, while the authorities of supervision and penalties' regulation remain in the member states, emphasizing the autonomy of each state. In this way, the RGGI offers plenty room for member states to develop proper systems to adapt with their own situations [8].

The distribution is the second challenge that the carbon emission trade system of China faces. Firstly, the distribution is controlled by the administrative power of all levels, meaning that fairness counts on the local government inevitably. What's more, the administrative procedure prescribes that the emission quota should be distributed based on the historical and current emission records of units. This discourages the emission unit to reduce the volume since more carbon dioxide they emit looser quota they would get in future. Lastly, the gratis quota brings the threshold to the new enterprises for they need to pay for the newly added quota. For instance, the regulation of Guangzhou requires the newcomers to promise to purchase enough paid quota in the next few years, which is clearly unfair and violating the market principle. And the gratis quota is obviously usurping the public resources that ought to be shared with all people. The public would have to pay a lot to gain clean products and environment. Conversely, the auction systems of RGGI make sure that the quota is distributed by the market in public. The auction participants do not only need to register in the RGGI COAT, but also gain the confirmation of the member states. As what mentioned in the former part of auction, it is widely open to all subjects in the market for the same price and opportunities. The profits would be used to improve the environment projects by the member states in advance [9].

4.2. The Possible Solution and Improvements

The most vital solution is the official national law of carbon emission trade system. It should give the clear legal attribute of the carbon emission rights. And it needs to provide sufficient room for local laws to complete the content of local emission trade systems. The real rights must be listed in the Civil Code. While the administrative licensing only requires the local government to establish the procedure of application and examination. Therefore, the most proper attribute of carbon emission right defined in the law should be the administrative licensing which is allowed to be traded in certain market under the regulations of the government. In that way, the local government could set the local

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carbon emission systems according to their conditions, bound by the united national law of carbon emission [10].

Respecting the differences between the provinces, proper autonomy will allow the offset procedures and information platform to be more flexible, maximizing the potential trading volume of market [11]. For the distribution, the application of auction form should be promoted step by step. Starting with the flexible industry, paid quota would help the system to be more open and active. Since the local government tends to favor the local and established enterprise due to the tax. The national law of carbon emission must forbid them to erect the barricade for the newcomers. Additionally, third-party institution could join the supervision along with the government to verify the angles of management. The system should be open and fair with the support of both administrative and legal powers.

5. Conclusion

It is a difficult task to pursue the goal of reducing carbon emission while keep a high economic growth rate. The carbon emission trade system, however, is a possible solution to strike a balance between them. Considering the population and both historical and current emission volume, China and the US are certainly the two of the most suitable countries to carry out the practice. The difference is that the US has the experience of that practice over thirty years and a better tradition of market environment. Through the comparation, it is obvious that the national law of carbon emission is required by the market and the system should be flexible to offer local government sufficient autonomy. Either the introduction of auction or the authorization of local governments is to coordinate the economy with the current situation. With these measures being taken, there might be a way that keep the perfect balance between the economy and the reduction of carbon emission in China.

References

[1] *Deng H.: On Quasi-Property Nature of Environmental Capacity Law and the Composition of Right Thereof. China Legal Science, 22(4), 59-66 (2005).*
[2] *Wang M.: On Carbon Emission Right's Dual Nature. China Legal Science, 27(6), 92-99 (2010).*
[3] *Wang B.: Follow up the Development of China's Carbon Emission Trading and Its Legislation. Presentday Law Science, 13(2), 13-25 (2015).*
[4] *Tietenberg T. H.: Emissions Trading: An Exercise in Reforming Pollution Policy. The Journal of Politics, 48(1), 220-222 (1986).*
[5] *Stavins, R. N.: Market-Based Environmental Policies. Resources for the Future, 31-46 (2000).*
[6] *Program Design Archive. RGGI, https://www.rggi.org/program-overview-and-design/design-archive, last accessed 2022/9/25.*
[7] *Ramseur, J. L.: The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress. U.S. Government Printing Office (2014).*
[8] *Babiker M.: Climate Change Policy, Market Structure, and Carbon Leakage. Journal of International Economics, 65(2), 421-445 (2005).*
[9] *Pollack L.: Legal Boundaries of Air Pollution Control. State and Local Legislative Purpose and Techniques, Law and Contemporary Problems, 33(2), 331-357 (1968).*
[10] *W.D. Montgomery: Markets in Licenses and Efficient Pollution Control Programs. Journal of Economic Theory, 5(3), 395-418 (1972).*
[11] *Gillingham K., Newell R., Palmer K.: Energy Efficiency Policies: A Retrospective Examination.*
[12] *Annual Review of Environment and Resources, 31, 161-192 (2006).*