

The System Innovation of Environmental Regulation: Voluntary Environmental Agreements

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Abstract. System innovation is one of the theories in the area of environmental regulation. Voluntary environmental policy approaches are new instruments in environmental policy. This paper takes the voluntary environmental agreements as the theme, analyzing this topic from its background, content and the implementation in china. This article focuses on the possibility of its implementation in china. It was elaborated from the subjective and objective aspects. In the objective aspect, it includes the limitations of compulsive means, economic measures and the public information requirement. In the objective aspects, it mainly contains the pressure of regulation or non-regulation.

Keywords: Environmental regulation; Voluntary environmental agreements; Policy instruments

1. Introduction

With the development of economy, environment pollution makes enormous losses all around the world and many countries have spent much on the governance of environment pollution. Environment pollution and its governance has become an important factor in the sustainable and healthy development of the world's economy. In China, the long-term extensive growth pattern has lead to serious damage on natural resources and ecological environment, and also brought severe potential harm to the society. With the improvement of people's living standard, the public demand for high quality of environment is gradually increased, it is the key for China government to seek path to reduce the environment pollution and then increase the welfare of the public and promote national's sustainable competitiveness.

Environmental policy tools are the important content of environmental regulation, and they continue to develop and change with the experience accumulating of the human environmental management. Voluntary agreement type of environmental management is the result of the constantly changing and evolving environmental management tools. In general, the environmental management attitude of the government and enterprises has experienced the process of "never trust, regulation to the trust, support, and negative resistance to positive and active cooperation". This change has laid a good foundation for the pattern of voluntary environmental management. From the 1970s, the command-and-control(CAC) environmental regulation policy and the market-oriented economic incentive policy have played an actual role in the control of environmental protection, but over time the two policy tools continually highlights its defects, and the emergence of the voluntary environmental management becomes inevitable^[1].

2. The Connotation of the Voluntary Environmental Agreements

The command-and-control (CAC) environmental regulation policy and the market-oriented economic incentive policy were the main policy in developed countries in the 1970s and 1980s, while in the 1990s, voluntary environmental agreements gradually became an indispensable part of in environmental policy. Voluntary environmental agreements (VEAs) are a special form of voluntary environmental measures. After the first implementation of environmental agreements in Japan in 1964, the United States, Europe, Canada,

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Australia and other countries and regions have all adopted the VEAs. Voluntary environmental agreements have different names in different countries, such as “Covenant”, also known as Voluntary Agreements (Vas), Voluntary Environmental Agreements (VEAs) or Environmental Partnership (EP). There are many definitions about environmental agreement, but the content is basically similar. According to the Environment Ministry of European Union, environmental agreement means the commitments that negotiated and recognized by most of the companies or operators association and government authorities. In the "Framework Convention on Climate Change", environmental agreement is defined as an agreements signed voluntarily by enterprises which are encouraged by government and the agreement aims to promote social expectations^[2]. In conclusion, the academia defined voluntary environmental agreements as a non-statutory agreement signed by enterprises, government, and non-profit organizations, which aims to improve the environment quality or increase the effective use of natural resources^[3].

Voluntary environmental agreement is a typical kind of cooperation mode in environment regulation, and it is an innovation created in the environmental regulation game between the enterprise and the government. It mainly emphasizes on the voluntary of industry or enterprises rather than mandatory to participate in the environment management. This mechanism was originally put forward by policy makers and industry sectors, and was a more flexible and pragmatic response to the emergence of new economic and environmental problems. As an agreement between the government and enterprises, voluntary agreement aims to promote the voluntary behaviours of the industry, and to obtain satisfactory result of society. The agreement is encouraged and recognized by the government. Participants signed an agreement on the basis of their own interests, and in the agreements, the environmental regulators set out higher environmental goals and more stringent environmental responsibility. In addition, the agreements should clear parties' respective rights and obligations. Voluntary environmental agreements are one kind of the environmental administrative contract, which is the contract about the rights and obligations of establishment, alteration or termination that directly related to the environmental management. Environmental administrative contract is signed by administrative body and administrative relative person and aims to achieve a specific objective in environmental management and exercise the environment administrative functions. Voluntary agreement is legally binding once it has been signed, and both sides should earnestly implement it. From a legal point of view, the voluntary environmental agreement has the following three characteristics^[4]. First, it is an administrative agreement. One party of voluntary agreement is the administrative subject, and the administrative subject vested with executive excellent usufruct. Second, it is an environmental agreement. Voluntary environmental agreements aim directly at implementing environmental management objectives and the goal is to make the environmental administrative authorities can protect environment effectively. At last, it is a contractual agreement. It is a fundamental characteristic that can make it different from the usual administration way and the key to the make full use of its advantages.

3. The Development of Voluntary Environmental Agreements

3.1. The application of voluntary environmental agreements in the developed countries

After the first implementation of voluntary environment agreement in Japan in 1964, from the 1980s, it was rapidly used in many developed countries and the agreement covered a number of fields, including energy, industry, climate change ,air pollution control and waste management. The rapid expansion of voluntary environment agreement has improved the effectiveness of environmental governance around the world and the environment quality has been greatly improved. The "Netherlands model" developed better than other models and became the typical model. The Netherlands is not only the country that its economy has growth unexpected in the 1990 s, but also one of the countries that carried out voluntary environmental agreement earlier and in the widest coverage. Since the implementation of voluntary environmental agreement, the Netherlands's environmental protection has made brilliant achievement. In 1992, the Netherlands signed the first round of environmental voluntary agreements with 44 pieces, involving 29 industrial sectors and most agreements ended in 2000 and completed the established goals. From 1998 to 1998, the energy efficiency has increased by 22.3% (about 2% per year), equivalent to save 157 PJ energy, and cut 9,000,000t carbon dioxide emissions per year. According to calculation, environmental voluntary agreement has brought economic benefits of 700 million euros to the industrial sectors^[5]. In addition,

Denmark, Germany, the United States, Canada, UK, France, Australia, Norway and so many developed countries have implemented voluntary environmental agreements.

3.2. The application of voluntary environmental agreements in China

The voluntary environment agreement in China started late and has not become a boom. In 2003, the Shandong government signed the first voluntary environment agreement in China with Laiwu Iron and Steel Group Corporation. The enterprise promised to save one million tons of standard coal in three years, which would save 145,000 tons energy than the goals originally set^[6]. In 2008, the environment protection bureau of Nanjing signed a "voluntary environment agreement of industrial enterprises to implement energy conservation and emissions reduction" with China cement company, Nanjing Automobile Group, Nanjing chemical industry co., LTD, Nanjing iron and steel co., LTD. According to the agreement, since the beginning of 2008 to the end of 2009, the enterprises should improve the efficiency of product energy by 5% per year, and the emissions should be decreased by 3% per year. By organizing and implementing the programs to save energy and cut emission, the enterprises show a higher environmental image and get social honours.

4. The Possibility of the Implementation of Voluntary Environmental Agreements in China

Due to the subjective and objective reasons of the present situation of environmental regulation, it makes the implementation of voluntary environmental agreement has certain possibility in China. The government should choose different environmental policies to promote the rational utilization and effective allocation of environmental resources according to the different social, political, economic conditions.

4.1. The deficiencies of Coercion

Coercion is one kind of effective tools for pollution control, but in recent years, with the strengthen of people's environmental consciousness, and the outstanding environmental problems as well as the change of government function, coercion has exposed more and more limitations, mainly manifested in the following aspects: First, in traditional coercion, the authorities need to effectively control the various types of pollution emissions, know the polluting information of thousands products. But the huge amount of information costs too much, which greatly affect the effectiveness of mandatory policy. Second, coercion often lacks of flexibility and resilience. Under the coercion, in order to make the policy adapt to the new environment and change, the government needs to make detailed regulation according to the production technology and once the regulation be used, it is difficult to change. coercion always achieve unification at the expense of efficiency and the policy making is often one size fits all, and regardless of the different regions, technical differences between enterprises or the marginal cost of pollution treatment, which make policy lack of efficient in the execution and cause serious waste of resources. Fourth, coercion can not stimulate the enterprises to control pollution consciously, thus increases the social costs and impedes the function development of allocation resource of market.

4.2. The deficiencies of economic methods

First, there is the failure of the price mechanism in environmental management. At present, the environmental problem is rooted in the price of environment and resources do not properly reflect the scarcity of environmental resources, and the most effective way to solve the environmental problems is reasonable pricing and paid use of environmental resources, and to achieve the effective allocation of environmental resources^[7]. The market price can reflect the scarcity of resources in usual, however, when the market price of the economic resources deviate from its real value, it will inevitably lead to the misallocation of resources. When environmental resources become increasingly scarce, and it still sells at low or zero prices in the market, the result is the unreasonable development and utilization of environmental resources, which then will cause serious environmental problems.

Second, there is the failure of government. "To internalize externalities" is the effective means for government to implement market intervention and to solve market failure in resource allocation. But if the government intervention is not enough, or is excessive and inappropriate, it will lead to the failure of policy,

and appear the phenomenon of excessive utilization of resources or environment. In dealing with the global environmental problem, economic methods such as charge and discharge permit have large impact on the national income transfers, high charging scale can lead to significant transfer of industrial structure. However, the use of economic methods may produce the negative effects such as inhibition of GDP growth. For subsidy system, the misappropriate subsidies will promote the development of these behaviours rather than prevent and control the economic and environmental damage behaviours.

4.3. The requirements of information disclosure

From the point of the characteristics of information disclosure, it is a behavior of government, and the object is the enterprises. The behavior is stimulated by the community and public pressure. For the government, they can get new information through information disclosure, which can help them set priority areas of pollution control, optimize the limited resources and improve the efficiency of pollution control and environmental protection. For enterprises, they can know the products demand of public whose environmental consciousness has gradually strengthened and the demand of environmentally friendly products is increasing. Information disclosure can lead the market orientation and encourage enterprises to control pollution and procedure more environmentally friendly products. For the public, information disclosure can make them understand the function and application of environmental letters and complaints, and pay more attention to environmental protection information and gradually improve the environmental protection consciousness, thus puts forward higher requirements on environmental information disclosure, and promotes the circulation between the environmental management departments and the public. Strictly speaking, the environmental information disclosure is not a specification tool, however, with the development of information technology and the increasing of transparency of economic activities, the deterrence of environmental information continuously emerging, and the VEAs is established on the basis of environmental information disclosure .It can be say that if there is no environmental information, there will be no VEAs.

4.4. The pressure from regulation

Because of the uncertainty of hydrological condition, climate change and the existing conditions that limit the conservation of the natural environment, it is necessary to develop diversified way to develop water resource. In addition to the traditional way such as make plan to develop the reservoir water and groundwater, but still need to promote rainwater collection retention, seawater desalination, sewage recycling, industrial waste water recycling and the recycling of irrigation drainage water. The goal of the environmental regulation is to correct market inefficiencies in solving the problem of environmental externalities. Low efficiency or inefficiency of market is the theoretical basis for the regulation method of command - controls policy, but the pressure from the command - controls policy is also the major factor led to the voluntary environment agreement. In theory, the enterprises can avoid the control cost by participating in voluntary environment agreements, and only with cost minimization can enterprises choose this approach. In empirical research, many studies have confirmed that the pressure from regulation or threat can affect the behavior of participating in the voluntary environment agreement. The pressure can not only affect the behavior of enterprises to participate in or not, but also can affect the setting of emissions reduction targets in voluntary environment agreement. If regulate or the threat of legislation is very weak, the targets of emissions reduction may very low, even lower than the level stipulated in the legislation. Only the threat of legislation is very strong can it makes the optimal level that more than the level stipulated by law and achieves the goal of improving environmental quality.

4.5. The pressure from external environment

The increasing environmental consciousness of public puts forward new requirements to the government , and the right to get environmental information gradually been recognized by the public and the law. Consumers, capital markets, NGOs and communities can also promote enterprises to participate in voluntary environment agreement. In most studies, the pressure from regulation is the most frequent explanatory variables, and the pressure from external environment is the main factor for the enterprise to

participate in voluntary environment agreement, at the same time, the more closer to the final consumer , the enterprise may the more easily affected by external pressure.

5. Conclusion

Voluntary environment agreement has shown its great effect in practice. Because of the existing internal and external factors in the environmental management, it is possible to implement voluntary environment agreement in a large scale in China, and the government should vigorously advocate and promote the use of the voluntary environmental agreement. Voluntary environment agreement is a new tool and the background assumption is "self control", but "self control" is not replace mandatory regulation exclusively. Therefore, how to maximize the use of voluntary tool and combine mandatory tools, economic methods and voluntary environment agreement is the most urgent problem.

6. References

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