

Third Party Environmental Governance of Chemical Industrial Pollution

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Implementing third-party environmental governance on chemical pollution can continuously enhance the level of chemical pollution control and is very important to the regional environmental governance, optimization of industrial structure, development of environmental services and construction of ecological civilization. Despite the fact that it can optimize the efficiency of governance resources allocation, reduce the cost of environmental supervision and law enforcement and enhance credibility and social mobilization effect, the actual implementation still faces many barriers, like those in enterprises themselves, responsibilities, financing, taxes, law and regulatory supervision. Therefore, a progressive model should be adopted for the third-party governance, and in addition, other measures should be taken, like refining the responsibility sharing mechanism, establishing the economic incentive mechanism, improving relevant legislations and strengthening the supervision mechanism.

1. Introduction

The chemical industry is a technology and capital intensive basic industry, which mainly includes refining of crude oil products and manufacturing of basic chemical raw materials, chemical fertilizers, pesticides, paint/ink/pigment products, specialty chemicals, synthetic materials, rubber products and special equipment. While developing its own industrial scale, it is also providing indispensable technological and material support for industries and fields such as electronics, energy, medicine, agriculture and national defence and making great contributions to raising people's living standard, promoting the development of national economy and pushing forward the progress of social civilization. During the "12th Five-Year Plan" period, the chemical industry in Jiangsu Province realized a total revenue of 8.82 trillion RMB and a total profit of 517.461 billion RMB. In 2015 alone, 4535 chemical enterprises above designated size throughout the province achieved a total revenue of 2,020.549 billion RMB, an increase of 86.03% over 2010, that is, an average annual increase of 13.22%. This figure accounted for 15.37% of the national industry revenue, making Jiangsu remain in the second place of all the provinces in China. Within the province, 63 chemical parks support a majority part of the chemical industry in Jiangsu. However, there are still many prominent problems, like the homogenization and low quality of chemical equipment and products and increasing pressure from safety, environmental protection and society. The chemical industry produces a large amount of harmful substances, which seriously pollute the ecological environment and affect the quality of life (Wang, 2015). The third plenary session of the 18th central committee of the CPC proposed to "establish a market-based mechanism to attract social capital into ecological and environmental protection, and implement third-party governance of environmental pollution. On January 14, 2015, the General Office of the State Council released the Opinions on Implementing Third-Party Governance on Environmental Pollution. Under the guidance of this regulation, it is very necessary and also meaningful to study the third-party governance on chemical pollution, so as to create a favorable market environment based on marketization, specialization and industrialization, improve government management and services, establish a unified, regulated, competitive and orderly third-party governance market, attract and expand social capital investment and help establish a new mechanism where

polluters pay and third parties provide governance services and in this way constantly improve the level of chemical pollution control.

2. Current status of third-party environmental governance on chemical pollution

2.1 Motives for implementing third-party environmental governance on chemical pollution

2.1.1 To optimize the efficiency of chemical pollution governance resources allocation

Introducing third parties in chemical pollution control can not only realize intensive and specialized pollution control, but also activate the assets of polluters and obtain public support for them so as to enhance their corporate reputation and develop intangible assets (Paul et al., 2000). To a certain extent, it can also drive the development of the environmental service industry and the financial industry and realize the effective allocation of environmental protection and pollution control resources.

2.1.2 To reduce the environmental regulatory enforcement costs of the chemical industry

In the market mechanism, third-party governance on chemical pollution will gradually achieve intensive governance. In the intensive pollution control mode, the regulatory targets will be more concentrated and more easily supervised, and thus the costs of regulatory enforcement will be greatly reduced (Richard and Andrews, 1998). In addition, third-party "supervision" also indirectly reduces the regulatory enforcement costs of the environmental supervision authority.

2.1.3 To enhance the credibility of the enterprises with chemical pollution as well as social mobilization effect

Implementing the third-party governance model for chemical pollution is not only the strong desires of the government, chemical polluters and third-party governance enterprises, but also the common wish of non-governmental organizations and the public. Once this model is implemented, all sectors of the community will have more confidence in environmental pollution control, the government and polluters will gain more credibility, and all sectors of society will be mobilized to participate in the cause of environmental protection.

2.1.4 To respond to the government's policy support for third-party governance on chemical pollution

The *Opinions on Implementing Third-Party Governance on Environmental Pollution* issued has served as a guide to the future development of third-party governance. In addition to the central government's effort, local government also gives active response to the third-party environmental governance. The central government provides top-level design from the macroscopic perspective, while the local government explores and practices third-party governance on the meso and micro levels.

2.2 Constraints to third-party environmental governance on chemical pollution

2.2.1 Barriers in governance service enterprises themselves

Currently, the chemical environmental protection market itself is still far from mature, and the service undertakers are generally not strong enough in pollution control, which have seriously hindered the promotion of the third-party governance model for chemical pollution. Environmental service enterprises engaged in third-party governance on environmental pollution still mainly consist of small and medium-sized enterprises with small scales, weak technological strengths and low service levels (Zhang, 2017). At present, few enterprises can provide specialized process design, construction and operation services for environmental pollution control. The market is in extreme lack of large leading enterprises, especially those with outstanding economic strengths and excellent pollution control abilities.

2.2.2 Barriers in responsibility definition

Improper definition of environmental pollution responsibilities not only results in an unfair system, but also directly hinders the smooth implementation of third-party governance on chemical pollution (Liu, 2016). Currently, it is very common that polluters and third-party undertakers pass the buck to each other. The polluter thinks that it should not assume any legal liability for unqualified pollution discharge since it has handed over the pollution control to the third party; but on the other hand, the third party argues that the key cause of the unqualified pollution discharge lies in the polluter's failure to strictly perform the contract requirements, which makes it hard to control the pollution. The unclear definition of responsibilities between the two sides directly affects the trading structure of third-party governance.

2.2.3 Barriers in financing

Financing issues have become the bottleneck restricting the implementation of third-party governance on chemical pollution and the development of the chemical industry. This is determined by the characteristics of the environmental protection industry. Usually, initial investments in environmental projects are generally large but take a long time to recover, and the expected rate of return on capital is not very high. In the implementation of third-party environmental governance on chemical pollution, due to its significant difference

from the PPP model in the field of public utilities, the difficulty in financing has become even greater. In addition, whether the future cash flows signed in contracts can be used as collateral for project financing is also a major barrier to financing.

2.2.4 Barriers in taxation

Chemical polluters consign pollution control to third parties. The polluters pay pollution control fees, and environmental service companies should pay various taxes. This not only increases the pollution control costs in the whole society, but also directly suppresses the chemical polluters' initiatives to use the third-party governance model. Currently, for those environmental service companies with weak overall strength and limited profitability, the taxation intensity is slowing down their growth and the development of the environmental protection industry and also undoubtedly hindering the smooth implementation of third-party governance on environmental pollution.

2.2.5 Barriers in legal system

In the *Environmental Protection Law* and other various pollution prevention and control laws that guide the environmental protection work in China, the chemical pollution prevention and control system is unipolar and closed and has no specific regulation on the third-party governance model. The *Opinions* has elaborated and established the framework for the third-party governance model. However, as a normative document, it only regulates and guides the third-party governance model at the macro level and does not give details on implementation, so there is no mandatory regulation on each party in the third-party governance. In addition, there is no legal ground for contract negotiations and settlement of disputes between the two parties.

2.2.6 Barriers in regulatory supervision

With the implementation of third-party governance on chemical pollution, the government has to supervise not only the chemical polluters, but also the third-party governance enterprises, which has increased the work load and complexity of the environmental protection authority. At present, relevant authorities lack adequate environmental management capabilities and law enforcement and testing bodies are decentralized, with weak foundations in environmental monitoring, supervision and law enforcement (Arts, 2006). The shortage of staff, poor system and lack of effective regulatory means all make it difficult to implement environmental supervision and are even less helpful to establishing a good law-abiding environment. In addition, environmental regulators still lack effective regulatory measures, procedures and service management regulations to supervise the third-party enterprises.

3. Construction of the third-party environmental governance model for chemical pollution

3.1 Principles for construction of the third-party environmental governance model for chemical pollution

3.1.1 Share responsibilities and be honest

The chemical polluter assumes the main responsibilities and the environmental company assumes the responsibilities within the scope of the contract. Progressive policies should be developed according to the actual chemical pollution and control status. Polluters should truthfully disclose their pollution data, and third-party governance enterprises should also truthfully disclose their pollution control results.

3.1.2 Conduct process control and scientific governance

Based on end-of-pipe control, third-party governance enterprises can provide chemical polluters with whole-process services from process design, engineering construction, equipment procurement, production management to comprehensive utilization of resources. Enterprises and government should keep up with the changes of times, adopt advanced management equipment and technologies, apply scientific management methods and develop scientific governance policies.

3.1.3 Control pollution in a centralized way and pay attention to efficiency

New chemical industry projects should be constructed and governed in a centralized manner. Special types of pollutants should be pre-treated before entering the pipe network while general chemical pollutants should be treated by the environmental service companies on a paid basis. In addition, relevant enterprises should pay attention to efficiency and develop efficiency-oriented governance ideas and awareness, improve the efficiency and professional level of chemical pollution control and increase the vitality of the social capital into the pollution control market.

3.2 Selection of target progressive model for third-party environmental governance on chemical pollution

3.2.1 Comparison of major third-party governance approaches

There are mainly two types of cooperation in third-party environmental governance on chemical pollution: cooperation between enterprises and cooperation between government and enterprise. The participants in the former type of cooperation are the chemical enterprise and the third-party environmental governance enterprise, with the costs covered by the chemical enterprise, while those in the latter type of cooperation are the government and the third-party environmental governance enterprise, with the costs covered by the government (Liu, 2015). The pollution control responsibilities of chemical polluters are transferred and centralized to the environmental service companies through contracts. These environmental companies accept the consignment or entrustment from enterprises in the form of entrusted or franchised operation to help enterprises complete the pollution discharge targets and tasks and meet the environmental treatment standards. The government mainly conducts examination and review of these enterprises and their work as the regulatory and review authority. From spatial distribution, there are distributed and centralized governance. The details are listed in Table 1.

Table 1: Comparison of third-party environmental governance approaches for chemical pollution

Classification standard	Major types	
Type of cooperation	Cooperation between enterprises	Cooperation between government and enterprise
Outsourcer	Enterprise	Government
Participants	Chemical enterprise and third-party pollution control enterprise	Government and third-party pollution control enterprise
Facility ownership	Entrusted operation	Franchised operation
Payer	Chemical enterprise	Government
Spatial distribution	Distributed governance	Centralized governance

3.2.2 Selection of the target third-party governance model

Implementation of chemical pollution third-party governance progressive model, combined with the management of the gradual decision theory, into the special national conditions in our country, comply with environmental laws. It is the urgent need to control the current serious chemical pollution, and foster new industries in Jiangsu province and promote economic growth.

(1) Transformation of the main structural relationship

The main structure of third-party governance on chemical pollution emphasises the leading role of the market. However, it takes time to change the traditional thinking and improve the position of the market. In addition, the profit model and cooperation approach are still in the exploratory stage, and the functions of third-party governance enterprises also need to be gradually increased.

(2) Progressive modification of the social environment

Chemical pollution inevitably affects the cycle of the entire ecosystem. So it will take a substantially long time to treat and control the ecological environment affected by chemical pollution. In Jiangsu province, third-party governance is far from mature and still faces lots of problems, so the reality forces us to choose the progressive model.

(3) Reduction of risks

The contractual relationship between chemical polluters and third-party governance enterprises make both parties supervise and restrict each other, and in this way effectively reduce the risks of pollution. The progressive model for third-party governance, as a reflection of the objectivity and dynamism of interests and an embodiment of long-term and dynamic environmental governance, is an inevitable choice to coordinate the interests of all parties.

4. Paths for third-party environmental governance on chemical pollution

4.1 Refine the responsibility sharing mechanism for third-party environmental governance on chemical pollution

Considering the differences in chemical pollution responsibilities and the contractual nature of third-party governance, in order to make both chemical polluters and pollution controllers fulfil their responsibilities and constrain each other, the responsibility sharing principle should be implemented and both sides accomplish the internal responsibility assignment through contract. Specific ideas: 1. For any environmental violation that only results in civil liability or fine (administrative liability) or penalty (criminal liability), externally the chemical

polluter and the pollution controller should both bear the joint liability, and internally the other party can claim compensation from the violator according to the entrusted governance agreement; 2. For any environmental violation that results in administrative or criminal liability, relevant authority should determine the party to assume the legal liability according to the entrusted governance agreement and the actual conditions.

4.2 Establish the economic incentive mechanism for third-party environmental governance on chemical pollution

4.2.1 Establish the environmental protection fund for chemical pollution control

In terms of fund raising, the environmental protection funds should be mainly supported by the government fiscal fund and appropriated from the pollution discharge fees and special pollution control funds (Liu, 2014). The environmental protection funds should be set up by level, that is, a national environmental protection fund for third-party environmental governance on chemical pollution should be established first, and then local funds can be further set up (Ge et al., 2014). In addition, fiscal transfer payment mechanisms involving both vertical and horizontal transfers should be established, such as the third-party governance guidance fund and the government-finance cooperation fund.

4.2.2 Implement preferential tax policies for third-party governance on chemical pollution

For third-party governance on chemical pollution, discriminative charging policies should be implemented. On one hand, raise the charging standards for pollution discharge and then offer preferential rates for chemical polluters adopting third-party governance; and on the other hand, implement the environmental protection electricity tariff policy on environmental service enterprises undertaking third-party governance services. According to the *Opinions*, the immediate levy and refund policy may be implemented for the VATs of the third-party governance projects undertaken by environmental service companies; and for control facilities, house property tax and land use tax may be exempted.

4.2.3 Improve the diversified investment and financing mechanism

Expand the scope of financing guarantee, and innovate and promote loans pledged on accounts receivables and right of charge; offer finance discounts to financial loans to third-party governance projects and related environmental service enterprises; continue to promote the market-based construction of environmental protection infrastructure and actively introduce PPP/BOT/TOT business models; and actively introduce strategic investors, optimize ownership structures and corporate governance structures and enhance investment and financing functions.

4.3 Improve relevant legislations for third-party governance on chemical pollution

Make more efforts in the research and development of relevant regulations, rules, systems, methods and incentive and restraint mechanisms to create solid legal guarantee for the implementation of third-party environmental governance on chemical pollution (Benjamin, 2002). Since there is no clear provision on third-party governance in the *Environmental Protection Law*, details of the mechanism can be included in the future legislation process. The *Opinions* promulgated by the General Office of the State Council should be further enriched and improved.

4.4 Enhance the environmental supervision mechanism for third-party environmental governance on chemical pollution

4.4.1 Enhance the environmental enforcement mechanism

Under the third-party governance model, the targets of environmental regulation are the environmental service enterprises undertaking the actual responsibilities of chemical pollution, but at the same time the chemical polluters should also be supervised. While the law enforcement and punishment are enhanced, the mandatory and limited-term implementation system should also be established for third-party governance. In practice, the law enforcement team should strengthen their supervision on this grey area, conduct thorough inspection on the discharge of chemical pollutants and operation of pollution control facilities, improve the professional knowledge of frontline law enforcement officials, and enhance the effectiveness of supervision over polluters.

4.4.2 Improve the integrity and reputation mechanism

Establish integrity record system and credit rating system. The environmental protection department of local people's government and other environmental regulatory departments should put the information on illegal chemical pollution into social integrity records and disclose the list of violators in a timely manner to the public. At the same time, these authorities should establish credit rating systems and give different policy guidance for law-abiding and violating enterprises, and at the same time, the public will evaluate and supervise the integrity of chemical polluters and the pollution control abilities of third-party governance enterprises.

4.4.3 Establish the market entry and exit mechanism

For the bidding, contracting and responsibility definition of third-party governance, the government should issue appropriate guidance documents as soon as possible to speed up the establishment of industrial standards for and market operation of third-party governance. In addition, the correct measurement of the pollution control effects of third-party enterprises is the key to the evaluation on pollution control ability and the criterion for market entry and exit, and also the main basis for determining the contract fees of chemical pollution control. Therefore, it is necessary to establish and open up an evaluation system for the chemical pollution control effect, so as to regulate the third-party pollution governance market.

5. Conclusions

The implementation of third-party environmental governance on chemical pollution is still in its early stage. Choosing the progressive model for third-party environmental governance will help us find distinctive ways to improve pollution control efficiency, reduce the risk of chemical pollution and enhance the effectiveness of social mobilization. Jiangsu Province should take this as an opportunity to actively explore and carry out top-level design within this region according to the regional conditions and clear the barriers for third-party governance on chemical pollution, so as to promote green chemical industry, facilitate the harmonious development of the chemical industry and the environment, improve the economic growth and sustainable social development, and cultivate new economic growth points.

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