

Government Thoughts on Environmental Cost Control

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Abstract. The Japanese government arbitrarily releases nuclear pollution into the Pacific Ocean. It reduces the time and economic costs of enterprises, but also causes the loss of environmental costs. From the perspective of international law, this is even more illegal. This also reflects that Japanese enterprises and the government do not pay enough attention to environmental cost control. They fail to realize that environmental damage will inevitably lead to enterprises and governments needing to spend more costs to make up for it, which is not conducive to ecological environment protection and human long-term development. Therefore, from the long-term interests, the government and enterprises should bear the responsibility of controlling environmental costs. The government should play the role of macro-control and replace the end of governance with the source of governance. It plays a role in improving legal norms, strengthening supervision and guidance, establishing and improving the emission trading system, and increasing environmental information disclosure.

Keywords. Environmental cost control, marine pollution, Government guidance, Emission permit trading

1. Introduction

The Japanese government announced that the direct dumping of 1.3 million tons of nuclear waste into the sea, which violated the obligations of international law and would cause major pollution and damage to marine ecology.[1] It takes at least 20,000 years for these nuclear-contaminated wastewater to be completely diluted by marine ecosystems. This kind of behavior that will bring huge environmental costs must be paid attention to. Governments should learn from it and control environmental costs in a reasonable way, especially the control of corporate environmental costs.

Furthermore, Enterprise environmental cost control is a long-term and arduous comprehensive work that runs through each link of the enterprise. A single control method cannot achieve the development of low-carbon economy of enterprises. The government needs to play a role, combined the actual situation and specific needs of our country, from many aspects to improve the mechanism loopholes, build a reliable guarantee mechanism in line with social trends, response to the central government's call to develop circular economy, and strive to implement the international requirements of economic and social sustainable development. [2]

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Thank Shanghai University of Politics and Law for the convenience of finding data and literature, and thank my students for their help in finding data.

2. Cost of Marine Environmental Pollution in Japan

2.1. Increased Social Environmental Costs

In the traditional environmental cost calculation theory, the enterprise environmental cost only includes the economic cost consumed by enterprises to protect the environment. And excluding the loss of enterprise environmental cost caused by resource and environment consumption. This also makes enterprises often choose to sacrifice the environment in exchange for economic growth. This way may save the cost of enterprises in a short time, the consequences of resource depletion and environmental damage will eventually shift to the enterprise. Enterprises need to consume more cost to control environmental pollution. The choice of Japan's nuclear power plants to discharge nuclear wastewater directly into the Pacific is closely related to cost choices. Since the nuclear leakage accident, the Fukushima Daiichi nuclear power plant in Japan has not been able to create value for Japan's economy in its development. [3] Instead, it has cost the Japanese government nearly USD 190 billion in the past 10 years. Therefore, in order to save time and economic costs to the greatest extent, the Japanese government abandoned the traditional treatment methods of nuclear pollution such as stratum injection, drainage into the sea, steam release, hydrogen release and underground burial. Instead, Japan chose to dump nuclear wastewater into the sea and transfer environmental costs to society.

Moreover, the reality proves that the discharged nuclear wastewater cannot completely eliminate radioactive elements even after treatment. Tokyo Electric Power Company used to remove radioactive elements by setting up accident radioactive sewage purification device, but the effect is not obvious, tritium, strontium, cesium, iodine, and other radioactive nuclides still exist. These radioactive materials will also spread around the world with the water cycle.

GEOMAR, a German marine research institution, has simulated the specific path of nuclear pollution emissions, showing the important impact of nuclear pollution emissions on the environment. As shown in Figures 1, from the date of nuclear sewage discharge, the diffusion to most parts of the Pacific Ocean within 57 days will be affected by high radioactive substances. After 10 years, radioactive substances will spread throughout the entire ocean, and even reach all corners of the land with ocean currents and precipitation.

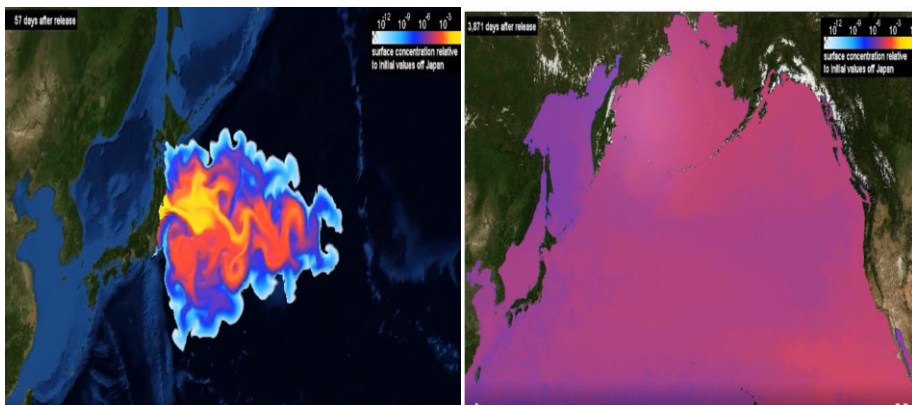


Figure 1. The diffusion range of nuclear pollution after 57 days and 10 years.

2.2. The Illegal Cost of Pollution Is Too Low

In 1985, the States parties to the ' London Convention ' agreed at the Ninth Consultative Conference on a moratorium on the marine disposal of low-level radioactive wastes resolution 21, and decided to maintain an indefinite moratorium on the dumping of low-level radioactive wastes and other radioactive materials at sea until the final research and evaluation. [4] In addition, the modalities for the disposal of nuclear wastes are clearly defined in a number of international regulations, such as 'London Dumping Convention', 'Convention on the Safety of Spent Fuel Management' and 'Convention on the Safety of Radioactive Waste Management', and 'United Nations Convention on the Law of the Sea', as shown in table 1. It is an internationally wrongful act for Japan to discharge nuclear waste into the sea in violation of international provisions and evade its obligations under international law.

Table 1. Modalities for the treatment of nuclear pollution and provisions of international law.

Types of nuclear waste	Principle of management	Processing mode	Countries	Provisions of international law
intermediate and low level radioactive wastes	Multiple Barrier principle	Near-surface shallow buried disposal or cave disposal	USA, France, Germany	'Joint Convention' 'London convention' 'treaty on the non-proliferation of nuclear weapons'
high level radioactive waste	Absolute security principle	deep geological repository	USA	
spent fuel ²	Spent fuel treatment is carried out with reference to high-level radioactive waste			

² According to the provisions of relevant international law

However, due to the lack of operability and enforcement, the relevant international laws and regulations are only moral condemnation in dealing with Japan’s nuclear pollution, and there is no actual legal responsibility, which is not conducive to building a good international order. Low costs of illegality can also make such violations emulated by other countries, leading to increased marine pollution.

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3. Macroscopic Control Function of Government

The position announcement of environmental accounting and reporting adopted in 1999 makes the following definition of environmental cost: ‘Environmental cost refers to the cost of measures required to manage the impact of enterprise activities on the environment in accordance with the principle of environmental responsibility, and other costs paid by enterprises to implement environmental objectives and requirements.’ The definition clearly defines enterprise-centred and primary responsibility for eliminating environmental impacts.

Nevertheless, the environmental costs of different enterprises are different. For example, chemical enterprises, metal industries and other special industries have a high

threat to environmental pollution, and they also consume high environmental control costs. [5] As shown in Table 2, the environmental costs of different industries are quite different, and the key pollutants to be treated are also different. In order to focus on solving the principal contradiction, it is necessary for the government to carry out overall planning and identify an industry in the area under its jurisdiction as the target to calculate and control the pollution of all enterprises in the industry and reduce environmental costs.

Table 2. Environmental costs of different industries.

Types of business	Hi-tech industry	Chemical enterprise	Pharmaceuticals industry	Metal industry
A	2574	22855.97	28809	24000
B	2344	21536.55	12483	30000 ³

³Table 2 Based on CSMAR Database

In other words, from a macro perspective, government guidance is the premise and the government has the right and obligation to control and guide the environmental costs of society. Whether the enterprise's environmental cost control method is appropriate or not directly affects the government's cost expenditure. It includes the cost of pollution control, the cost of compensation for the general public, and the cost of formulating policies to restrict and punish enterprises.

From the perspective of cost and benefit in law and economics, the government save costs and reduce government spending is the general trend. So how to save costs, which requires the government to be based on the whole, draw lessons from successful experience and for enterprise environmental cost control policy, formulate corresponding policies in advance.

4. Macroscopic Control Function of Government

4.1. Improving Relevant Laws and Regulations on Environmental Cost Control

Our government must be committed to formulate environmental cost control regulations for enterprises, improving environmental cost accounting laws and regulations, and strengthening the administrative punishment of enterprises, which is the necessary premise to improve the current situation of environmental cost control in China's enterprises, because legal policies must play an important role in the actual behavior of enterprises.

Specifically, the coverage of China's current environmental regulations is narrow, the content and requirements of environmental cost control are not clear and environmental protection standards are not uniform. Therefore, it is necessary to improve from the above three directions. At the same time, it is necessary for the government to actively learn lessons from the laws and regulations of countries with similar successful experience and add the elements suitable for our country to the laws and regulations of our country in order to formulate specific environmental cost control criteria. By clarifying the significance of environmental cost control, and the disclosure of environmental cost control information, so as to better guide the practice of Chinese enterprises and achieve the win-win situation of enterprise economy and social benefits.

4.2. Strengthening Oversight Guidance

Perfect laws and regulations can not guarantee that enterprises can consciously abide by the relevant system. Therefore, relevant government departments need to increase guidance and supervision of enterprises. Implement real-time monitoring of enterprise environmental cost control, strengthen administrative penalties for violations, formulate more specific and detailed cost control requirements, timely and comprehensively guide enterprises to carry out environmental cost control. [6] In addition, the government can also reasonably use price control means and media supervision means to promote and establish the concept of green production of enterprises, and divide regions for centralized pollution control, so as to reduce the environmental cost expenditure of enterprises in the region.

4.3. Increasing Disclosure of Corporate Environmental Cost Information

The China Securities Regulatory Commission and the Ministry of Finance undertake the disclosure and supervision of relevant accounting information. Since the environmental cost of enterprises also involves environmental protection, and the statistical data and corresponding indicators of the National Environmental Protection Bureau are more convincing, the National Environmental Protection Bureau also shoulders the responsibility of information disclosure. In this way, it is not only conducive to spur enterprises to control environmental cost, but also conducive to the use of international platforms to improve corporate environmental awareness and encourage the government to comply with the trend to develop a sound control policy. Firstly, the information released by the enterprise should be reliable, rigorous, and timely. Secondly, professional staff should strengthen the research of information disclosure technology, and formulate relevant audit computer system. Furthermore, setting up a specific audit department in order to see whether the purpose of each environmental cost expenditure is reasonable and amount of funds is not enough.

4.4. Increasing Disclosure of Corporate Environmental Cost Information

Emission permit trading refers to the environmental protection department to formulate total emission control index, and according to the total control index, the environmental protection department issued emission permits to sewage enterprises. [7] According to the requirements of total amount control, pollutant emission enterprises must discharge according to the requirements of emission permits which can be traded between pollutant emission units. On the one hand, enterprises can't choose to control pollution emissions and offset their excessive emissions by purchasing the emissions of other enterprises. On the other hand, enterprises with residual emissions can sell their emissions to other enterprises and profit from it. Pollution permit trading is more flexible and effective than the traditional pollution charge system.

Emission permit trading is an effective means of market financing for environmental protection industry. The government can give indirect subsidies to enterprises by trading pollution permits to effectively control pollution, and give indirect penalties to enterprises with poor pollution control. Thus, encouraging enterprises to increase investment in environmental protection equipment and increasing demand for environmental protection products. In addition, the government can also raise funds for the environmental protection industry by auctioning permits.

5. Conclusions

Environmental cost control is a long-term and complex work. In order to better implement cost control, the government needs to make long-term efforts and give play to the role of macro guidance, learn from the lessons of Japanese government and enterprises' laissez-faire pollution, distinguish pollution control indicators in different industries, and improve measures in many aspects such as law, regulation, and system, so as to better promote the high-quality development of enterprises.

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