

Enterprise Ideas of Environmental Cost Control

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Abstract. In the context of dual carbon, reducing carbon emissions and carbon pollution has become a necessary condition for clean production of enterprises. But in order to reduce environmental pollution, enterprises need to spend a lot of cost. These costs affect corporate earnings and future development, and how to effectively control environmental costs has become a key issue for high-quality development of enterprises. From the enterprise point of view, we can start from the following two key points. On the one hand, enterprises need to start from themselves to improve environmental risk awareness and control standards to control corporate environmental costs in the whole process. On the other hand, they need to form a joint force to control corporate environmental costs by means of PPP model, green trust, international financing and other ways.

Keywords. Enterprise environmental cost control, PPP, green trust, active international financing

1. Introduction

As the main body of social and economic activities, enterprises' production and management activities have more and more serious impact on the ecological environment. With the increasingly serious environmental pollution and the increasing awareness of environmental protection, the social responsibility of enterprises in environmental protection has naturally attracted more and more attention from the government and the public. Therefore, enterprises should take the initiative to undertake for social responsibilities, reflect on the shortcomings of environmental cost control methods and develop new and effective environmental cost control strategies, so as to support the country's economic concept of sustainable development, improving economic and environmental benefits, and achieving a win-win situation.

2. Enterprise Environmental Cost

Environmental costs include external and internal costs. The internal environmental costs directly affect the economic benefits of enterprises, such as the cost of environmental protection technology research and development, the cost of clean production, including the reuse of resources, the operation and maintenance of environmental protection

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facilities, the cost of environmental monitoring, the cost of pollution control, and other environmental management and environmental education costs.

According to the data in Table 1, it can be seen that enterprise A has invested more costs in the early technological research and development and the medium-term clean production, so it spends less in the prevention and control of enterprise pollution. On the contrary, enterprise B invests more costs in the treatment of wastewater and exhaust gas in the later stage, which will not only directly affect the earnings of enterprises but also generate external costs of the environment, including environmental damage costs, natural resource consumption and loss costs. These costs indirectly restrict the development of enterprises and reduce future earnings, and also generate risks of high environmental taxes, sewage charges and fines.

Table 1. Proportion of internal environmental costs.

Enterprise	Proportion of environmental technology cost	Proportion of clean production cost	Proportion of pollution treatment cost	Proportion of other environmental costs
A	0.16	0.44	0.39	0.0065
B	0.01	0.08	0.88	0.012 ^a

^a Table 1 Based on CSMAR Database

Table 2. How to conduct the enterprise environmental cost control.

Cost	Measures
the cost of clean production	the reuse of resources
the cost of environmental monitoring	the operation and maintenance of environmental protection facilities
other environmental management and environmental education costs	establish a monitoring and warning system
	control the cost of human resources
	teach employees to form environmental protection concepts
	establish an appropriate reward and punishment system

It can be said that environmental costs gradually occupy a large proportion in the total cost of enterprises. How to reduce the environmental costs of enterprises and effectively control environmental pollution while creating social wealth is a major issue faced by enterprises. Enterprise environmental cost control has evolved from traditional cost control, but compared to traditional cost control, it has its own characteristics: comprehensiveness, extroversion, and competitiveness.

3. Basic Principles for Enterprises to Control Environmental Cost

3.1. Strengthening Internal Environmental Risk Awareness and Internal Cooperation

Enterprises should improve the environmental risk awareness and establish a sustainable development strategy of economic and environmental protection. which should not only be implemented in the control of time cost, that is, the best time effect of pollution control should be fully considered, but also the cooperative relationship between enterprises should be correctly treated and a professional environmental cost management and control center should be established within the enterprise to pay attention to the environmental cost control of various departments of the enterprise.

3.2. Improving Standards for Enterprise Environmental Cost Control

Enterprises need to improve the environmental cost control standards, predicting and estimating the environmental cost of the project so as to formulate the corresponding control standards, which plays a significant role in cost control. Specific standards can be formulated in the following two ways. The first method is based on the environmental cost with the best state of the usual enterprise, but this is more suitable for enterprises with relatively stable environmental cost control. The second method is to rigorously analyze each project that will occur environmental costs in the enterprise product cycle, estimating and determining the environmental cost budget. In practice, enterprises should flexibly combine these two methods and strictly plan control standards.

3.3. Full-Process Control of Enterprise Environmental Cost

In practice, enterprises should flexibly combine these two methods and strictly plan control standards. In order to embody the concept of sustainable development, enterprises should monitor each link of production and operation, reasonably and effectively combine pre-planning, in-process monitoring and post-control to refine environmental cost control scheme based on the life cycle of enterprise products, so as to control costs from the source.

When purchasing raw materials, the selection of environmentally friendly materials, all aspects of the environment are required to achieve the minimum impact whether transportation or storage. In the environmentally friendly production phase, energy can be saved without using non-environmental materials, which can reduce the total amount of waste emissions in the production process; In the product sales phase, product packaging and transportation will involve the waste of environmental costs, which requires enterprises to choose the use of packaging materials recycling and environmental transport tools; In the final stage of waste disposal, waste is treated in strict accordance with the requirements of laws and regulations. As shown in Table 3, appropriate treatment methods are selected for different types of solid waste. For general solid waste, burial can be adopt-ed, and high-temperature disinfection is required for medical waste. At the same time in accordance with the provisions of the law to minimize the total emissions of environ-mental pollutants, in particular to follow certain emission standards; for scrap products, take recycling or recycling strategy, so as to reduce the degree of environmental pollution of these products and reduce environmental costs.

Table 3. Proportion of internal environmental costs.

Types of industrial solid waste	Pollutant treatment methods	Legal norm
non-hazardous industrial solid waste	Reprocessing; landfill	'Standard for pollution control on the non-hazardous industrial solid waste storage and landfill'
hazardous waste	Recycling, chemical treatment, incineration and safe landfill	'Standard for pollution control on the hazardous waste landfill'
medical waste	disinfection treatment incineration	'Standard for pollution control on medical waste treatment and disposal' ^a

According to the official website data of Ministry of Ecological Environment

4. Specific Implementation of Enterprise Environmental Cost Control

4.1. Implementation of PPP Project Financing Model

PPP (Public-Private-Partnership) model refers to the public sector and the private sector in order to achieve the goal of providing public goods or services to establish a variety of partnerships. And the narrow sense of PPP model refers to a series of project financing including BOT, TOT, BT, BOO, etc. The operation process of PPP mode is as follows:

- Agreement reached on behalf of one party authorized by the Government and one party representing social capital to establish a project company.
- The government and the project company signed a “special operating privilege”, in the agreement clearly stipulates the franchise granted object, time period, whether to pay the price, the expiration of the transfer, whether the financial subsidies and other content.
- Project companies and financial institutions carry out “loan financing agreement” to make reasonable use of loans within the appropriate scope.
- The government organizes design units and construction units to participate in project bidding and determines that the general construction contractor enters the construction stage.
- Entering the operation stage after the construction is completed. The main ways for project companies to obtain revenue are: user payment, government subsidies or government purchase services.
- The final results of the project are mainly in the following ways: transfer to the government, entrusted operation, free operation, etc.

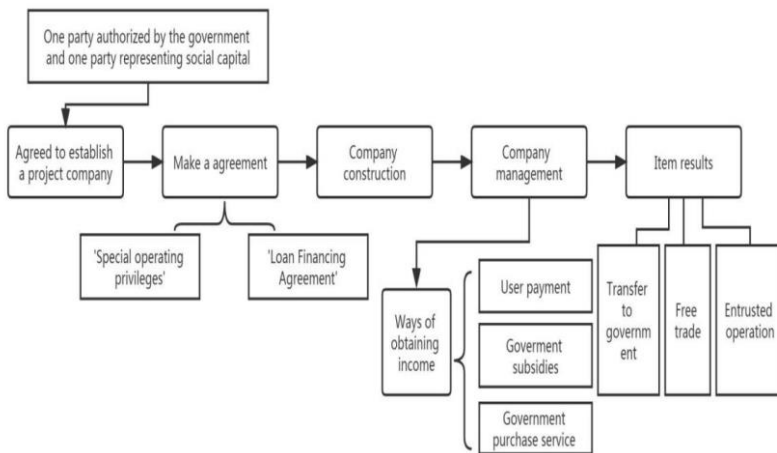


Figure 1. The operation process of PPP mode.

PPP financing mode can let more private capital participate in the construction of environmental protection projects, so as to improve the efficiency of funds and reduce the risk of capital investment. The operation rules of the PPP model can allow investors to participate in the previous work in terms of project confirmation, design and feasibility, thereby reducing the investment risk of investors. In addition, it is more effective to

control the construction and operation of projects by introducing the successful experience accumulated by private enterprises in the past investment and construction process as well as efficient management methods and advanced science and technology in projects. Overall, environmental financing can broaden the sources of funding for environmental protection. It can not only alleviate their own financial difficulties but also improve the level of environmental infrastructure construction.

4.2. Develop Green Trust

Compared with other financing channels, trust has the advantages of security, universality and flexibility. It is an effective financing method and is widely used in the real estate industry, minerals and other fields.

‘Green trust’ is a trust plan specially designed for financing the environmental protection industry. It takes environmental protection projects as the landmark, combines trust investment and financing, broadens financing channels, and promotes the development of environmental protection industry.

For example, after Fukushima nuclear leakage occurred in Japan, Tokyo Electric Power Company faced financial crisis and the company need a lot of funds to repair damaged power plants in the earthquake. It was because the trust group provided huge loans to Tokyo Electric Power Company in a timely manner, so that it had overcome this difficulty.

At present, Chinese environmental protection enterprises and trust institutions lack the application of this ‘green’ trust. Therefore, the current government should strive to build the concept of ‘green trust’ and use various preferential policies to ‘lead and bridge’ so that enterprises and trust institutions can cooperate to try this new financing channel. At the same time, the government should formulate relevant laws and regulations and strengthen the operation supervision of green trust, create a stable and good investment and financing environment, and attract more high-quality environmental protection enterprises to participate in trust financing.

4.3. Active International Financing

Because the environmental cost of enterprises is also related to environmental protection, a country’s environmental protection industry can not only make full use of international financing platform for the accumulation of funds, such as the use of international financial institutions, intergovernmental loans, special loans of international banking organizations. Large amounts of money can also be raised through international securities markets, using bonds, stocks and other financial instruments. The development of environmental protection industry in the international direct financing problem, can actively strive for foreign investment enterprises to enter the Chinese investment factory, to provide technology, environmental protection products, funds and equipment. Moreover, foreign enterprises can also be asked to participate in China’s environmental protection after staying in China, so as to improve China’s environmental problems.

5. Conclusions

Environmental issue of environmental cost has become an important issue that restricts the high-quality development of enterprises. Enterprises must actively assume social

responsibility, improve the awareness of environmental risk control and environmental cost control standards, and control environmental costs in the whole process of enterprise production. At the same time, it is necessary to make good use of PPP project financing mode, green trust, international financing and other means to control environmental costs, so as to effectively solve the problem of enterprise development. Enterprise environmental cost control will definitely bring considerable economic benefits to enterprises in the future. The production and development process of enterprises cannot be separated from the utilization of the environment, and environmental cost control is a key content of ecological development.

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