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“CLEANER PRODUCTION INITIATIVES AND CHALLENGES FOR A SUSTAINABLE WORLD”

Exploration and Practice on the Compulsory Cleaner Production Auditing of Key Enterprise in China

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Abstract

The very big result in the enterprise voluntary cleaner production auditing has been obtained since cleaner production was carried out in our country, and our country has been generally acknowledged as in the best development country for cleaner production. More and more key enterprises have implemented the cleaner production auditing in recent years. The work for cleaner production has been done in recent ten years. With the announcing key enterprises from each province environment protection hall for recent years, cleaner production auditing has been done by thousands of enterprises involving in more than twenty industries. Through the key enterprises of compulsory auditing of exploration and practice, this article on the key enterprises of compulsory cleaner production auditing need, innovation, implementation of status and elaborating the problems.

Keywords: *key enterprise; compulsory cleaner production auditing; auditing practice*

Introduction

China is internationally recognized as the best in developing countries for cleaner production, MEP in early 1993, with corporate pilot, demonstration and policy research for implementation of cleaner production in the country, very significant results have been achieved. The main features of the implementation of cleaner production in China is cleaner production audit, cleaner production technologies and cleaner production policies research and practice.

Since the implementation of cleaner production from 1993, cleaner production audit has been in the food, chemical, paper, beer, electroplating, building materials, metallurgy, petrochemical, power, coal, aircraft manufacturing, pharmaceutical, mining, electronics, tobacco, machinery, textile and transportation sectors, and obtained good environmental benefits, economic and social benefits^[1].

According to *Cleaner Production Promotion Law*, *Cleaner Production Audit Interim Measures* and *Procedures of Cleaner Production Audit for Key Enterprise* (UNCED [2005] 151), EPA of the provinces identified the implementation of cleaner production audit list of enterprises each year, key enterprises CP audits carried out flourishing in the country. Through key enterprise cleaner production audit in

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various industries, reduced emissions of various pollutants effective and created good economic and social benefits for enterprises at the same time.

1 Proposal of key enterprises compulsory Cleaner Production audit

National Development and Reform Commission and the former State Environmental Protection Administration formulated, examined and approved the *Cleaner Production Audit Interim Measures* on August 16, 2004, in which Cleaner Production audit was divided into voluntary Cleaner Production audit and compulsory audit for the first time, in which clearly stipulated that "the enterprises, whose emission of pollutants exceeds nation and regional emission standard and whose total emission of pollutants exceeds the total load target controlled by local government, should enforce Cleaner Production audit; for the enterprises, toxic and harmful materials are needed as raw material or produced during production, should enforce Cleaner Production periodically"; In December 2005, the former State Environmental Protection Administration issued *Procedures of Cleaner Production Audit for Key Enterprise*(UNCED [2005] 151), and formulated procedures and requirements of compulsory Cleaner Production audit work, which was a very important step to institutionalize and legalize Cleaner Production. In July 2008, the Ministry of Environmental Protection issued a *Notice of Strengthening Further Cleaner Production Audit for Key Enterprises* (UNCED [2008] No. 60), and *Guidance of Assessment and Acceptance of Cleaner Production Audit for Key Enterprises*, which marked foundation of assessment and acceptance system of Cleaner Production audit for key enterprises. The two documents are important elements of policy on Cleaner Production and innovation and improvement for Cleaner Production audit system, making senses in guaranteeing quality of Cleaner Production audit and enhancing the implementation rate of large expenditure in Cleaner Production, which has solved long existence problems of lack of regulation of government and lack of indemnificatory measures in Cleaner Production audit^[2].

2 The necessity of implementation of key enterprises compulsory cleaner production audit in China

2.1 China's national conditions need to introduce compulsory cleaner production audit

Compulsory cleaner production audit is for the Chinese national conditions and characteristics of law in China. It is taken into account the whole production process and equipment level is not high, the lower management level of domestic enterprises, considerable number of enterprises can't discharge standards, or that can not be stable discharge standards. The reason is enterprises lack of the awareness of cleaner production, capital investment is not enough. And more important are: firstly, resources and energy prices are lower, enterprises lack of motivation for energy conservation. Secondly, the level of cleaner production consulting services team is not high, they can not provide effective cleaner production processes and cleaner production program. Thirdly, the implementation of pollution charges is poor, the sewage costs are lower than the cost of pollution prevention, so that enterprises lack of the enthusiasm to implement cleaner production. Fourth, the lax enforcement of environmental protection departments, there is no effective means of supervision, some enterprises will be no pressure to implement cleaner production. Fifth, the enterprises not implementing cleaner production that is may be the pollution control costs on to society, make their products more competitive^[3].

Therefore, in order to promote more enterprises to implement cleaner production and stable discharge standards, environmental protection departments to choose a number of key enterprises every year, guide

the enterprises to carry out compulsory cleaner production audit, increase their compliance rate and reduce the total emissions of local pollutants.

2.2 Industrial pollution prevention and control is necessary to introduce compulsory cleaner production audit system in new period.

Industrial pollution is still the most important factor of environmental pollution and environmental incidents at this stage in China, a number of enterprises are excessive emissions, they can't meet the national or local emission standards. Air pollutants main from industrial enterprises, according to statistics, the six power group of air pollutants emitted 25% of the national total, the proportion of steel, non-ferrous metals and coke industries are also very high. Industrial pollution has the features of sudden and catastrophic, especially that industrial enterprises use and discharge toxic and harmful substances, they have greater environmental risk. More than 21,000 chemical enterprises nationwide, of which more than 50% located in the Yangtze River and Yellow River, once the problem occurs, the consequences would be unthinkable.

In this case, the establishment and implement of compulsory cleaner production audit system, effectively covered the industrial pollution which contributed to environmental pollution largely. Make these enterprises through cleaner production audits and the implementation of cleaner production program to improve the level of technical equipment, resource utilization and environmental management, to conserve energy (resources) and reduce pollutant emissions targets.

2.3 China's existing environmental management systems is necessary to introduce compulsory cleaner production audit system

From the first meeting of National Environmental Protection in 1973 to the present, our country exploring environmental management approach actively, it has found eight environmental management system with Chinese characteristics, that is: environmental target responsibility system, urban comprehensive environmental improvement and quantitative assessment system, centralized control of pollution and within a time limited, the sewage discharge declaration and registration system, pollution licensing system, environmental impact assessment system, and the "three simultaneous " system and pollution charging system.

This eight systems have played an important role in the management of environmental protection, prevent pollution and industrial pollution sources. But if from the connotation of the eight systems to analyze, we would not difficult to find these systems mainly reflect the thinking of the end of treatment, which focused on the management of pollutant emission requirements proposed. For example, the "three simultaneous inspection system" which essence is encourage to install pollution control facilities; "deadline treatment system" is also remedial measures, for the process of production services abatement request is not significant; the "environmental impact assessment system" consistent with proactive thinking, but the focus is on evaluation of pollutant discharge standards, and not paid attention to resource and energy utilization. Therefore, environmental management system construction is also necessary to introduce compulsory cleaner production audit system.

3. The results of compulsory cleaner production audit of key enterprises implementation in China

3.1 Industrial enterprises' carrying out Cleaner Production effectively promotes the process of pollution reduction

Industrial enterprises have achieved obvious environmental and economic benefits through the implementation of Cleaner Production. According to incomplete statistics from 33 provinces, autonomous regions and municipalities in 2007, the implementation of Cleaner Production program save 3.69 billion kWh electricity, 7.04 million tons coal, 380 million tons water; 60,462,646,700 tons of wastewater reduction, COD reduction of 95,000 tons, SO₂ reduction of 71,000 tons; Atmospheric emissions from boiler, sulfur dioxide and dust are drastically reduced. Reducing emissions of pollutants obtained the economic benefits of 15.2 billion Yuan, while saving energy and reducing consumption generated direct economic benefits of 5.89 billion Yuan. From the above data, it could obtain obvious environmental and economic benefits through the implementation of Cleaner Production program. Figure 1 reflects trends of economic benefits through the implementation of Cleaner Production program from 2004 to 2007.

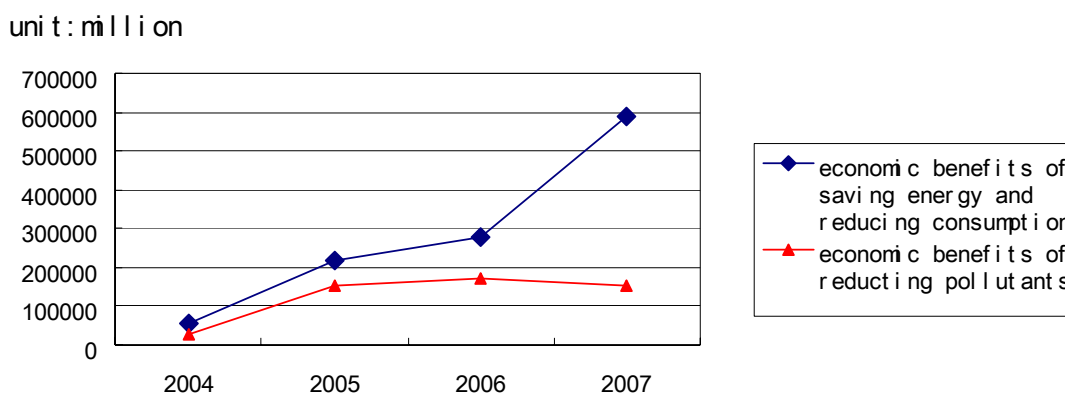


Fig. 1 Implementing cleaner production program of economic situation for 2004-2007

3.2 Regional Cleaner Production Capacity Building of technical advisory services being strengthened

Professional competence of staff and the number of Cleaner Production services organization reflect the capacity of technical advisory services of Cleaner Production. From the level of nation, China national Cleaner Production Center has organized training courses of national Cleaner Production auditor since 2001. By the end of 2007, a total of 8339 persons had been trained. From the provincial and municipal level, 113,505 persons were received Cleaner Production training. Figure 2 reflects the number of staff received Cleaner Production training from 2004 to 2007.

Well-developed intermediary organizations and the perfect intermediary system are essential conditions to promote Cleaner Production. If there is no intermediary organization to promote Cleaner Production as technical support and advisory services platform, a crucial role in the chain will be lost in propelling Cleaner Production. According to incomplete statistics, more than 300 industries or local Cleaner Production centers, some provinces and municipalities, such as Beijing, Guangdong, Gansu, Zhejiang, Sichuan, Jiangsu and others have recommended a number of Cleaner Production advisory services agencies with a high level through an open tender. The acceptance of Cleaner Production audit of technical services in enterprise is accompanied by institutional capacity assessment meanwhile.

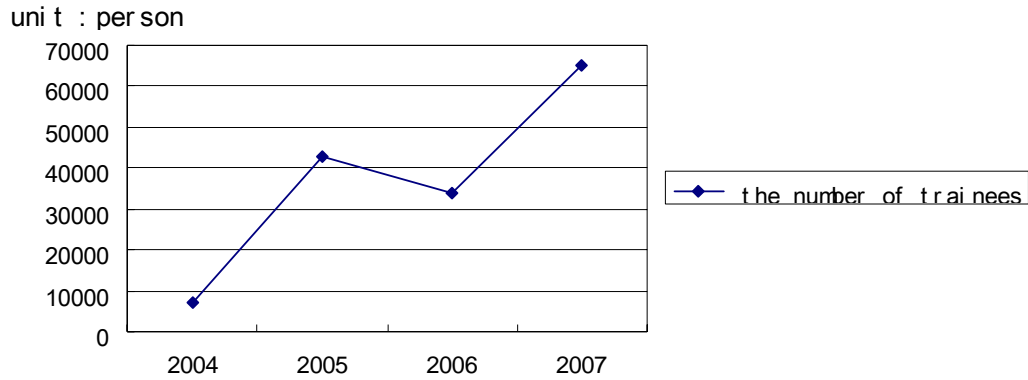


Fig. 2 training of cleaner production auditing for 2004-2007

3.3 Cleaner Production audit of industrial enterprises realized from pilot to expansion

The practice of Cleaner Production in China mainly conducted through the promotion of Cleaner Production audit. Before 2005, Cleaner Production audit was propelled through pilot demonstration until after the promulgation and implementation of *Cleaner Production Promotion Law*, exactly after national environmental system began to promote compulsory Cleaner Production audit comprehensively of key enterprises, the industrial Cleaner Production audit realized a leap-forward development from a point to a plane, the number of enterprises of Cleaner Production audit have emerged the trend of rapid growth. Figure 3 reflects the condition of the key enterprises' clean production audit. Over 95% of provinces and cities have already carried out Cleaner Production audit of key enterprises. By the end of 2007, according to incomplete statistics, Cleaner Production audit has been carried out in near 10 thousand enterprises, involving iron and steel, nonferrous metals, printing and dyeing, textile, paper, power, petroleum, chemical, building materials, pesticides, electroplating, manufacturing, and other some 20 industrials. The enterprises quantity of compulsory Cleaner Production audit will be growth at a faster rate in China.

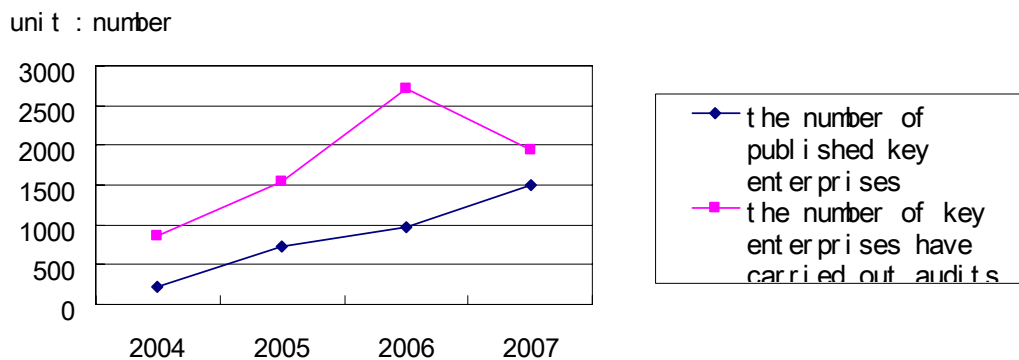


Fig. 3 Cleaner production audit work of key enterprises for 2004-2007

4. The problems of key enterprises compulsory cleaner production audit in China

Compulsory cleaner production audit is for the Chinese national conditions and characteristics of China's laws and regulations. It is taken into account the whole production process of domestic enterprises, equipment level is not high, and the lower management level, a considerable part of the enterprises can not discharge standards, or that can not be stable discharge standards. The reason is that in addition to enterprises lack of cleaner production awareness and capital investment is not enough, more important are:

4.1 Lax enforcement of environmental protection departments, the lack of effective monitoring tools

Overall, the developed countries mainly used in enterprises on a voluntary basis, by government to provide a degree of subsidy or preferential policies to encourage enterprises to carry out clean production audits. Enterprises as cleaner production to obligations and responsibilities, and also the basis for enterprise survival and development. But in China, relying solely on this mechanism can not stimulate enterprises to implement cleaner production independently. At present, we carry out compulsory cleaner production audit in China, the problem embodied in two points: the enterprises initiative to carry out cleaner production audit is not much, which high-fee program is also difficult to implement. The reason that the most important thing is lax enforcement of environmental protection departments and no effective means of supervision, some enterprises will be no pressure to implement cleaner production.

4.2 The prices of resource and energy is lower, enterprises lack of power on energy conservation and emission reduction

Our country have started to implement cleaner production in 1990s, the experiment site of cleaner production audit in some regions have achieved good results, but it is not widely and in-depth development. One reason is that the value of environment and resources has been underestimated or ignored for long term in China's economic development, which led to enterprises low-cost or free use of resources and environment for long term, without bearing the cost, not only exaggerated economic growth and distorted production and business activities of enterprises, but also affected initiative of the enterprises to carry out cleaner production.

4.3 Sewage charging policy is reasonable, so that enterprises lack of enthusiasm for cleaner production

Because China adopted charge of pollutants exceeding, received the cost not control the pollution; at the same time, because the problem of "bargaining" exists in charges, the result that enterprises pay sewage charges than the control waste "worthwhile". This is dampened initiative of enterprises to carry out cleaner production largely, and also left the hidden dangers of a fee and polluters shared environment "rent".

4.4 The pressure of funds

At present, most of heavily polluting enterprises are lack of initiative on cleaner production, because at the bad economic benefit circumstances, let the enterprises come up with money is very difficult. The domestic commercial banks taking into account the risk is large, and reluctant to enterprises loans general. Therefore, these domestic enterprises which pollution serious, technology backward

and prominent environmental problems just not financing, solving the problem of capital and technology will be considered by government urgently.

5 Conclusions

Cleaner production audit of key enterprises in China is still in the initial stage, and domestic enterprises have its own characteristics and needs, so in the absorption of European cleaner production systems, it should also take into account the characteristics of audited enterprises fully, though the use of developed countries cleaner production audit work experience flexibly, exploring a road of cleaner production audit for domestic enterprises and improving means of cleaner production audit, strive to achieve resource-intensive and efficiency maximization.

6 Reference

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