



Regulation by Law on Recycling Economy at the Enterprise and Ecological Industrial Park Level

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Abstract

The regulation by law on recycling economy at the enterprise and ecological industrial park level serves as the base of leveled regulation by law on recycling economy. The recycle of enterprise internal sources is the key for developed countries developing recycling economy. Following the requirements of recycling economy, countries constitute relevant laws and regulations, offering an institutional warranty for achieving cleaner production. In China, a law and policy system that benefits the development of recycling economy is still an absence. However, the horizontal coupling and vertical closeness of ecological industrial parks, together with the interactive effects between enterprises, make the regulation by law a necessity. Complete and perfect policy and legal regulations are important warranties for the development of ecological industrial parks. Therefore, China should further perfect the legal mechanism for the internalization of environment costs; build up and perfect a legal warranty system for full green technologies; set up and perfect a special policy and law system for ecological industrial parks management.

Keywords: Recycling enterprise, Ecological industrial park, Recycling economy, Regulation by law

The leveled regulation by law on recycling economy is an important component of legal regulations on recycling economy. The leveled regulation by law on recycling economy is performed at four levels, namely the recycling enterprise, the ecological industrial park, the recycling city, and the recycling field. Thereof, the regulation by law on recycling economy at the enterprise and ecological industrial park level serves as the base, what has extremely important significance in practice, in order to drive the development of recycling economy, strengthening the construction of regulation by law on recycling economy at the enterprise and ecological industrial park level.

1. Regulation by law on recycling economy at the enterprise level

Building up recycling enterprises is the primary base of developing recycling economy. To set up laws and regulations on recycling enterprises is the start of leveled regulation by law on recycling economy (Boyu Zhu, 2007, p211).

1.1 *The recycling enterprise and characteristics of the recycling enterprise mode*

To develop recycling enterprises is to use the theory of recycling economy to guide enterprises' operations, apply the three principles of recycling economy to enterprises, make comprehensive researches on the relationship between enterprises and environment, as well on enterprises' products, by-products, and wastes, and realize the cleaner production and the integrated utilization of resources by depending on the development and application of modern production technologies and environment-protection technologies (Zhijun Feng, 2004, p206).

Characteristics of the recycling enterprise mode include: Firstly, recycling enterprises hold advanced management ideas, environment-protection ideas, and technological innovation ideas that transfer the industrial ideas from traditional production and ultimate governance toward cleaner production and origin governance, from an only pursuit for economic objectives toward a double pursuit for economic and ecological objectives. Secondly, ways of resource utilization and economic growth in recycling enterprises are different from that in traditional enterprises. By means of internal exchange of logistics and energies, recycling enterprises set up ecological industrial chains, realizing the maximum of internal resource utilization and the minimum of environment pollution. Recycling enterprises achieve economic effects by intensive operations and internal growth.

1.2 *Regulation by law on recycling enterprises*

The recycle utilization of enterprise internal resources is the backbone of developed countries developing recycling economy. According to the requirements of cleaner production, enterprises adopt new designs and technologies to restrict the volume of wastes and pollution per unit to the allowable standard, realizing the recycle use of resources as

much as possible. The state should follow the requirements of recycling economy, and make up relevant laws and regulations, offering institutional guarantee for cleaner production.

(1) The legal regulations on recycling enterprises in foreign countries

In developed countries, the law of recycling economy emphasizes on the initial effects of enterprises on the consumption of resources and the generation of wastes, defining the responsibility of enterprises in resource utilization and wastes disposal, what serves as legal guidance for enterprise activities.

In Japan, the Basic Law to Promote Recycle Society establishes the responsibility of enterprises. It requires enterprises to take necessary actions to realize the recycle utilization as products turn into recycle resources after being used. Enterprises are responsible for the disposal and reuse of industrial wastes. The Environment Declaration issued in 2003 in Japan puts forward that enterprises should promote environment protection in operations, enlarging businesses by environment protection technologies. It encourages enterprises to realize the reuse of wastes. Meanwhile, it sets up legal punishments for activities offending the principle of cleaner production. The Law of Wastes Disposal in Japan establishes different standards for punishing more than twenty “illegal disposal” activities.

In United States, more than half of states set up regulations that require enterprises to follow the principle of “reducing wastes, realizing the reuse and recycle of resources”.

Under the effects of laws and regulations of recycling economy, enterprises in developed countries start various recycling economic practices according to self characteristics and situations and have already form a kind of atmosphere that benefits the development of recycling economy. For example, Du Pont Company builds up an internal recycling economic mode, innovatively developing the principle of “reducing wastes, realizing the reuse and recycle of resources” into a new production method that helps to achieve the environment protection goal of reducing wastes or zero disposal. It organizes the recycle of resources among different workshops, returning chemical matters from wastes, and developing new durable ethylene products. By giving up some chemical matters that pollute the environment in production, reducing the use of certain harmful chemical matters, and creating new crafts for returning products, the company decreases its wastes and exhausting gases to a great degree (Recycling economy project team of Employer Work Branch of China Enterprise Confederation, 2005, p17).

(2) Problems in developing recycling economy for Chinese enterprises and the legal countermeasures

At present, there is not a regulation and policy system that promotes the recycling economy in China. The Circular Economy Promotion Law of the People's Republic of China issued on 29th, Aug, 2008, will put in force on Jan. 1st, 2009. However, it is just a “framework law”. The Promotion Law of Cleaner Production in China does not clearly establish the responsibility and obligation of enterprises. And few laws and regulations focus on specific issues. The issue and application of the Interim Measures on Clean Production Checks are significant for promoting an overall cleaner production and regulating the checks on cleaner production. It establishes enterprises’ obligations of implementing cleaner production checks and regulates the due time for cleaner production checks. The results of checks should report in time. Enterprises that fail to fulfill the obligation of cleaner production checks should assume legal responsibilities. It defines the contents, procedures, and methods of cleaner production checks, what direct and helps enterprises to implement cleaner production checks according to relevant procedures and methods. However, other special laws concerning the development of recycling enterprises are still an absence.

Concerning the reuse of resources, it is necessary to promote the internalization of wastes disposal costs according to the law. Only when all costs of products (include social costs and ecological costs) realize the internalization in market, can resources achieve the effective utilization. Presently in China, not only enterprises do not pay for all ecological costs, but the government offers some allowances (for example, the government takes charges for wastes disposal that are lower than costs). As a result, enterprises may produce more wastes. In order to realize the long-term development of wastes return and disposal market, the industrial field must deal with the internalization of costs of wastes disposal. Meanwhile, promote the sorting of wastes in a greater scope by force. Because the disposal costs of returning recycle matters are higher than market prices, the market economy framework does not change a lot in encouraging the development of reversely returning channels. To solve this problem, two points should be done. Firstly, construct a compulsory wastes sorting and collecting system that will produce a large amount of recycling primary matters after consumption. Today’s mixed wastes disposal is complex on one hand. On the other hand, it has lower resource values. Sorting collection is a trend of wastes disposal. It is necessary to issue relevant law and build up a disposal system based on sorting. Secondly, strengthen the sorting collection of wastes and take measures to expand the demand for wastes. To increase the market demand for retrievable matters, we should pay attention to these important driving factors in developing the market: the incremental environment-protection costs of enterprise operations, the progresses in technologies and product designs, building up production workshops close to the sources of retrievable matters, etc. (Guotao Liu, 2005, p301-303).

As a developing country, the long-term extensive mode of economic growth determines that China should not blindly

copy the measures adopted by developed countries in developing recycling economy. In stead, China should control the overall process of social economic activities by analyzing the flow of materials. In China, we should encourage enterprises to adopt the life cycle evaluation method, considering the wastes management issue in a greater scope. According to the life cycle evaluation method, enterprises should perform a “from-cradle-to-tomb” overall evaluation as evaluating the effects of products on environment. The evaluation emphasizes on the effects on environment during different procedures, including the material refining process, the production process, the marketing process, and the final disposal of products. At the ultimate disposal stage, enterprises usually retrieve the wastes of products after the consumption. Therefore, many enterprises decrease costs by enhancing the recycle of wastes. For example, enterprises may think about how to realize easy recycle of wastes by products design. By this way, enterprises can obtain recycling materials at lower costs. These materials can be used for packing or other purposes. Meanwhile, it creates a final market for retrievable materials, supporting the development of recycling enterprises.

Besides, for some special industries that consume more resources, release more wastes, and can realize recycle of resources, China should make up special laws and strengthen the operability. As for the design of laws and regulations, we should emphasize on both rewards and punishments for enterprises’ ecological construction and environment protection. Adopt more effective economic incentives and other inspiring methods to drive enterprises to put recycling economy into practice. By means of prices, taxes, credits, and certificate fees, set up an economic compensation mechanism for ecological restoration and environment protection, guiding enterprises to develop the recycling economy voluntarily.

2. Regulation by law on recycling economy at the ecological industrial park level

The ecological industrial park is a larger platform for recycling enterprises. It does not satisfied with the simple recycle of resources and energies but aims at realizing the added value of overall resources and energies in certain area. The horizontal coupling and vertical closeness of ecological industrial parks, together with the interactive effects between enterprises, make the regulation by law a necessity.

2.1 Ecological industrial parks and the characteristics

There is not a universal recognition to ecological industrial parks (EIPs for short). It has different names, such as ecological industrial development (EID), ecological industrial networks (EIN), industrial ecological system, industrial community, by-product synergy, and integrative chain management. The most widely used one is the ecological industrial park (Gan Wang, Zhiqian Wan & Shuhua Zhong, 2003, p79). In general, ecological industrial parks are a kind of new industrial organizational form designed based on theory of recycling economy and idea of industrial ecology. It designs the industrial parks’ logistics and energy flows by imitating the natural ecological system. In ecological industrial parks, the by-products or wastes generated by an enterprise will be turned into another enterprise’s inputs or materials by wastes exchange or cleaner production, achieving the closed recycle of matters and the multi-level use of energies, forming an interdependent industrial ecological system similar to the food chain in natural ecological system, and realizing the maximum use of matters and energies and the minimum release of wastes.

The characteristics of ecological industrial park mode are: firstly, ecological industrial parks adopt different enterprise coexisting modes. According to the ownership relationships of coexisting units, the coexisting mechanism includes complex coexistence and independent coexistence. The complex coexistence means all participators belong to the same large group, or as child companies or workshops. The existence of a coexisting enterprise is completely determined by the group (the parent company). Recycling enterprises are in this kind of coexisting relationship in general. Independent coexistence means all participators are independent legal entities and there is not a subordinate relationship concerning ownership among them. In this coexisting system, the cooperation is entirely driven by economic interests, or for the sake of sharing infrastructures or reducing production costs. All participators are not constrained in administration by upper companies basically. This mode is proper for industrial parks. Secondly, the construction of ecological industrial parks is based on many enterprises. If the whole ecological industrial park realizes the ecological development of regional industrial system and the clean production really, every enterprise should firstly satisfy the requirements of cleaner production. In other words, all enterprises in an ecological industrial park must be recycling enterprises. However, for one enterprise, the cleaner production and internal recycle are limited because some wastes and by-products can not be consumed by the enterprise internally. Therefore, differing from recycling enterprises merely focusing on internal logistics and energy flows, the ecological industrial park emphasizes on the interaction of enterprises and the mutual influences between enterprises and natural environment. Thirdly, the ecological industrial park adopts modern management methods and policies, and new technologies concerning information share, water-saving, energy utilization, recycle and reuse, environment supervision, and sustainable transportation, ensuring the stability and sustainable development of the park (Zhijun Feng, 2004, p225-227).

2.2 Regulation by law on ecological industrial parks

In an ecological industrial park, on one hand, in order to follow the “3R” principle, each enterprise maintains direct or

indirect relationships with others. The close relationships in enterprise production should be adjusted by laws. On the other hand, all investors aim at interests in production and operation. Then, the production and operation based on pursuits for interests may betray the macro economic development in the park, affecting the overall construction of the park. Therefore, it is necessary to make up laws and regulations to adjust enterprise activities considering the general aim of the park. Since the ecological industrial park represents the idea of recycling economy, its policies and regulations should aim at coordinating and balancing the interests between enterprises and the park. The theory of benefit-balance is supposed to be the theoretical base for ecological industrial parks' legislation. Perfect policies and regulations are important guarantees for the development of ecological industrial parks. For all countries and regions where there are ecological industrial parks, the first step is to make up laws and policies, establishing the parks' nature, status, development aims, preferential policies, and protection measures in law, and promoting and ensuring the development of ecological industrial parks.

In specific, legal regulations on ecological industrial parks include these contents as follow:

(1) Perfect the legal mechanism concerning the internalization of environment costs

Because the environment is used as a public resource at a lower or without cost, some enterprises transfer the pollution costs to the society, which leads to a distortion between product costs and real costs. In China, because present laws about environment and resources do not include effective regulations concerning the internalization of "exterior diseconomy", enterprises in an ecological industrial park fail to make their price advantages prominent. Therefore, it is necessary to perfect relevant laws and regulations concerning environment and resources in order to achieve the internalization of exterior diseconomy, decreasing the prices relatively (Gang Wang, Zhiqian Wan & Shuhua Zhong, 2003, p81).

(2) Build up and perfect the legal system for green technologies

From the origin and the development of ecological industrial parks, where there is not the development of ecological technologies there is not the development of ecological industrial parks in a sense. For many industrial ecological chains and close recycling systems, the construction is supported by economical and reasonable technologies. However, the main strength that promotes the technological development is the system that benefits innovations, instead of the evolvement of technologies (Wangsheng Zhou, 2001, p12). So, technologies that support the development of ecological industrial parks, especially the ecological technologies, associate closely with the legal system. In other words, ecological technologies could not live alone without the powerful support of laws and regulations. Therefore, in order to apply and execute the Law of the PRC on Promoting the Transformation of Scientific and Technological Achievements, it is necessary to constitute relevant special laws, such as the law of scientific and technological input, the law of industrial promotion, and the law of achievements popularization, offering legal guaranties for the development of ecological industrial parks in technological supports.

(3) Build up and perfect the special policy and regulation system for the management of ecological industrial parks

The legislation of ecological industrial parks includes four aspects. The first is the policies and regulations concerning the construction of ecological infrastructure and the operation of ecological industrial parks. According to practices in developed countries, the "construction ----- operation ----- transfer" mode is to realize financing by using private capitals for the infrastructure construction and operation. This mode will benefit the construction of ecological infrastructure and the operation in China to a great degree. Related departments should make up relevant laws and supporting policies to encourage enterprises to operate public environment-protection equipments as soon as possible. The second is laws and policies concerning economic preference. In order to improve the competitiveness of products in prices, laws and policies should offer more economic preferences for enterprises in ecological industrial parks, chiefly including: preferential policies for the rate of loans for environment investment projects, conditions for repaying loans, and depreciation; using pollution charges, financial funds, or special funds to offer allowances for environment protection industries and technology updating projects that reduce pollution significantly; setting preferential taxes for enterprises in ecological industrial parks concerning business tax, value-added tax, and city construction maintenance tax; giving financial subsidies for products in ecological industrial parks, etc. The third is laws and policies about information system management in ecological industrial parks. The industrial information system includes related policies, project guideline for entering the parks, industrial network design, cleaner production technologies, logistics integration design, and environment management techniques (Quan Zhang & Yonghui Huang, 2004, p37). The fourth is policies and laws concerning technological guidelines. In order to match the construction of ecological industrial parks, it is necessary to compose relevant guidelines for the construction, especially for the design of ecological network, the integration of logistics and flows energies, water, wastes, and information, the enterprise education and training, the application researches, the implement of cleaner production technologies, and the formation of environment management system.

References

- Countermeasures. *Building Recycling-based Economic International Bigalopolis*. Shanghai: Shanghai Academy of Social Sciences Press. p37.
- Feng, Zhijun. (2004). *Introduction of Recycling Economy*. Beijing: People's Publishing House. p206.
- Liu, Guotao. (2005). *On the Green Industry and the Law of Green Industry in the Construction of Conservation-oriented Society*. Beijing: China Legal Publishing House. p301-303.
- Recycling economy project team of Employer Work Branch of China Enterprise Confederation. (2005). Practice and measures for Chinese enterprise developing recycling economy (I). *Shanghai Business*. No.4. p17.
- Zhang, Quan & Huang, Yonghui. (2004). The development of recycling economy and Shanghai's Wang, Gan., Wan, Zhiqian & Zhong, Shuhua. (2003). Legal system safeguards for the eco-industrial parks of China. *Science, Technology and Law*. No.2. p79.
- Zhou, Wangsheng. (2001). On the insitutional system of Zhongguan Cun field. *Research on Legislation of Zhongguan Cun*. Beijing: Law Press. p12.
- Zhu, Boyu. (2007). *Recycling Economy Regulation by Law*. Beijing: People's Publishing House. p211.