Research on the Legislation of Pollutants in Cross-border Electronic Transport: From a Comparative Research Perspective

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Abstract. With the progress of technology, the updating speed of electronic equipment is faster and faster. The generation rate of e-waste in various countries is also speedy. In addition, a large number of e-waste from developed countries are also exported to some underdeveloped regions, which makes their domestic e-waste output more. Electronic waste contains a variety of toxic additives or harmful substances, most of which will be discharged into the environment and affect human health. This paper is mainly based on the analysis of developing countries, especially China. Firstly, it analyzes the reasons and background of e-waste transfer of enterprises such as HP and Siemens, as well as the more stringent environmental protection treatment strategies in developed countries. Secondly, it compares and analyzes the existing laws and regulations on electronic waste between the developed countries, the United States, the European Union, and China. China should analyze the lack of laws on the cross-border transfer of e-waste, which are not comprehensive and specific enough, and there are still loopholes in the existing legal system. Finally, it analyzes how to solve such problems from the essence, and compares the national environmental protection consciousness of different countries. And the consequence is that the environmental protection consciousness of the developed countries is significantly higher than that of developing countries. Therefore, it is found that developing countries should start with the public consciousness, followed by legislation, and put forward some suggestions to improve the rule of law in China.

Keywords: Electronic Waste, Cross-border Transportation, Laws and Regulations.

1. Introduction

Under the trend of economic globalization and integration, the economies of all countries in the world are organically linked, and the degree of internationalization of production is greatly deepened. Under this background, the relationship between developed and developing countries is becoming closer and closer, and the division of labor is becoming more and more obvious. In the process of cooperation, some illegal acts that violate the principles of environmental protection are also emerging one after another. For example, since the 21st century, Some electronic companies registered in developed countries try to transfer their e-waste to some underdeveloped regions, such as Asia, especially China. And some plastic industries are also endangering the environment of developing countries. For example, multinational companies such as Coca-Cola and Pepsi have been labeled with key water pollution many times, and plastic waste has seriously polluted the global marine environment. And more for cross-border transmission. Taking China as an example, since its reform and opening up, China has introduced a large amount of foreign capital, mobilized the activity of the market economy, and made great contributions to China's economic development. However, since the 21st century, more and more multinational enterprises have been polluting China's environment. For example, developed countries such as the United States have transferred the electronic industry to China, resulting in the pollution of electronic waste. The existence of these seriously polluting enterprises has seriously damaged China's ecological environment and brought indelible damage to China. With the gradual improvement of national and public awareness of environmental protection, these heavily polluting multinational corporations have gradually been exposed to the public. For example, in the United States, the treatment of e-waste is dangerous and troublesome, and the cost is also very high. Therefore, like many other waste transfer methods, e-

waste is also transferred to developing countries most simply. The environmental protection department of the U.S. government is stringent in the supervision and charging of (cathode ray tube) displays as hazardous waste. However, the U.S. Environmental Protection Agency, the responsible department of the government, has left a large loophole in recycling. If e-waste is recycled, it does not have to dispose of it according to the hazardous waste standard. They want to evade government regulation and transport all electronic waste to the developing world in the name of electronic recycling. The recycling of electronic waste contains huge profits. The gold obtained after synthesis will become bullion and enter the gold market after re-purification and another disposal. Copper and other metals will be sold to metal smelting enterprises and become renewable raw materials for industry. This has greatly developed the social economy. However, the electronic waste contains a variety of toxic additives or harmful substances. If the waste does not enter the recycling system, it can produce a large number of brominated flame retardants and mercury. If traditional incineration is adopted, it will produce a large number of toxic gases. It seriously threatens human health. Guiyu, Guangzhou, China is one of the largest e-waste dismantling plants in China. Guiyu, originally a poor rural area, began to deal with e-waste in 1995 and has rapidly developed into the largest e-waste treatment center in China. However, the former rice-growing area has become almost all the available building space for the recycling of hundreds of e-waste. The disposal of e-waste makes residents in this area have more income, but it seriously destroys the living environment of local people. Most of this e-waste is shipped from the United States to Hong Kong and then transferred here. Some of them come from Japan, Western Europe and other countries. Because e-waste contains many toxic substances, e-waste seriously pollutes the local water and soil. In fact, to control the delivery of toxic waste from western countries to developing countries, the international community has formulated a series of conventions [1]. For example, in March 1989, 115 countries signed the Basel Convention on the Control of Transboundary Movements and disposal of hazardous wastes. In September 1995, the agreement against the export of toxic waste, an amendment to the Basel Convention signed by representatives of nearly 100 countries in Geneva, prohibited developed countries from exporting toxic waste to developing countries for final disposal. However, a superpower like the United States is not a member state, which means that its e-waste may be exported to all parts of the world, causing huge environmental pollution. These improper legal acts are caused by both subjective factors: the lack of responsibility of multinational corporations, and objective factors: the lack of legislation on foreign environmental protection in China. Taking China as the research object, this paper aims to analyze the development trend of the host country's future environmental legislation and the legislation regulating the environmental behavior of multinational corporations and put forward feasible suggestions.

2. Legal Problems Causing Improper Environmental Behavior

2.1. Causes of cross border transfer of electronic waste

2.1.1. Lack of social responsibility in some developed countries

For a long time, many developed countries have been making excuses for transferring waste or some heavily polluting enterprises to developing countries and trying to defend the premise hypothesis of economic rational man and the theory of comparative advantage in economics. The comparative advantage of developing countries is that the average life expectancy of families in developing countries is not high, so the impact of waste transfer is small. Secondly, the theory of comparative advantage also believes that countries that have not been polluted have more space to contain toxic waste than developed countries. These theories are simply unreasonable, which also reflects the extreme lack of social responsibility in developed countries, and the use of self-deception to cover up their mistakes. Compared with developing countries, developed countries have advanced science and technology to eliminate toxic waste, so they have more capacity to eliminate hazardous waste. Then, according to the theory of comparative advantage, why not transfer electronic waste to

developed countries for better treatment. Therefore, what developed countries do is use some means to plunder economic and environmental resources. In addition, the disposal cost of e-waste in developed countries is very high, and people have a high awareness of environmental protection. They oppose the disposal of waste in developed countries, which accelerates the transfer of cross-border e-waste [2].

2.1.2. Ignore the disaster in developing countries to make a huge profit

The Chinese government has strictly restricted the import of 21 kinds of waste household appliances such as computers and air conditioners since 2002. The prohibited details also include parts, loose parts, and broken parts. However, although the state does not allow the import of electronic waste such as computer monitors and circuit boards, it does not restrict the import of scrap steel, waste paper, and other waste products with low environmental risk and high realization value that can be used as raw materials. Some entertainments are also allowed in these waste articles, but the total amount shall not exceed one ten-thousandths. Moreover, electronic waste contains a variety of toxic additives or harmful substances. If the debris does not enter the recycling system, it can produce a large number of brominated flame retardants and mercury. If traditional incineration is adopted, it will produce a large number of toxic gases. It seriously threatens human health [3]. In developing countries, most people use the most traditional way to disassemble e-waste. While bringing a lot of wealth, it also brings huge environmental pollution. Lead, mercury, cadmium, hexavalent chromium, polychlorinated biphenyls, polybrominated diphenyl, ethers, other teratogenic, mutagenic, and carcinogenic pollution components in e-waste seeped into the ground or discharged into the air with the simple treatment of underground workshops, causing great pollution to the local water source and air [4].

2.2. China has lower standard laws about pollutants

2.2.1. The definition of electronic waste

At the most basic level, there is no definition of e-waste in China's legislation, and most of the management methods of e-waste are legislated from the perspective of solid waste. Chapter V of the management measures for the prevention and control of environmental pollution by e-waste Paragraph 3 of Article 25 “electronic hazardous waste” refers to the electronic waste with hazardous characteristics listed in the national list of hazardous wastes or identified according to the identification standards and methods of hazardous wastes stipulated by the state. It includes products or equipment containing lead-acid batteries, cadmium nickel batteries, mercury switches, cathode ray tubes and polychlorinated biphenyl capacitors. It is defined by enumeration, but it is not exhaustive only by enumeration. In fact, as early as 2003, the European Community issued a special decree on electronic waste, namely the electronic waste decree, which first explained that electronic products rely on current/voltage/electromagnetic motion, and such products are not driven by unlimited current but operate within a certain voltage range. Later, the waste was explained. That is, waste is an abandoned or idle thing. And the law also includes the accessory parts of electronic products in the scope of electronic waste. Compared with the two types of legislation, it is not difficult to see that the latter’s decree is more effective than the general enumeration of the former’s departmental regulations [5].

2.2.2. Domestic illegal liability for cross-border transfer is unclear or too light

Although China has attached great importance to the transfer of cross-border e-waste in recent years, it has not kept pace with laws and regulations. There is no relevant separate law for cross-border e-waste transportation, and the relevant provisions are reflected in some legal documents such as the provisions on the administration of environmental protection for waste import. And many penalties for electronic waste are not enough, resulting in the public's low awareness of some administrative regulations or departmental rules. Even if they realize that they will be punished, they are only fined far lower than profits and business suspension for rectification. For example, in Chapter IV of the regulations on the administration of recycling and disposal of waste electrical and electronic

products revised in 2019, among the administrative penalties for violation of the regulations on the administration of recycling, most of the penalties for the relevant responsible parties are ordered by the relevant supervision departments to make corrections within a time limit and impose a fine of less than 50,000 yuan. However, it is hardly known that the recycling of electronic waste involves huge profits. In particular, the gold obtained after synthesis will become bullion and enter the gold market after re-purification and another disposal. Copper and other metals will be sold to metal smelting enterprises and become renewable raw materials for Industry [6].

2.2.3. There are legal loopholes

Most of the cross-border e-waste is transferred from Hong Kong to the mainland. The reason is that China is a member of the Basel Convention, which regulates the subject country, while Hong Kong, as a special administrative region, the transfer of electronic waste to the mainland through Hong Kong is not controlled by the Convention. Secondly, the working arrangement on the control of waste transfer between the mainland and Hong Kong does not provide for the legal prevention and control of the transfer of e-waste to the mainland by Hong Kong as a transshipment place. As a result, many people take advantage of the loopholes in the law to transship in Hong Kong, and problems emerge one after another [7].

2.3. Reference of developed countries

2.3.1. EU environmental protection system

In order to meet the health and environmental challenges, the directive on waste electrical and electronic equipment and the directive on the prohibition of the use of certain hazardous substances in electronic and electrical equipment issued by the EU are regarded as the most representative laws on electronic waste in the world. They restrict the use of several toxic materials in the manufacture of circuits and electronic products, and stipulate five priorities for the management and disposal of electronic waste: reduction, reuse, reuse Other ways of utilization and disposal. In February 2020, the European Parliament passed a resolution on the new action plan for the circular economy, requiring more measures to be taken to achieve the urban waste recovery rate of 55% by 2025, 60% by 2030 and 65% by 2035, while the urban waste landfill rate will not exceed 10% by 2035 [7]

2.3.2. Laws in the United States

In fact, the legislative process of environmental protection has been developing since the 1970s. In the US waste management legislation resource protection and Recovery Act (RCRA), the whole process from waste generation to disposal, that is, all links of hazardous waste, are monitored, especially the whole process regulations on toxic substances are more detailed. In addition, the RCRA has made special provisions on the cross-border transfer of e-waste, that is, in part 263 - standards applicable to transporters of hazardous waste, that is, before export, a series of documents shall be submitted for the approval of EPA, and the EPA shall communicate with the government of the importing country to obtain the consent of the importing country; When transferring and transporting, various documents must be attached, such as documents approved by the stopping country, relevant documents and materials of electronic waste, etc. After export, set up an annual report system and submit it to EPA regularly to summarize the export situation every year. The same is true for the main process of imported e-waste. Although there are few legal provisions on cross-border e-waste in the United States, they are highly systematic, unlike China’s provisions on e-waste scattered in various legal documents [7].

2.3.3. Reference to China

It is undeniable that China’s e-waste management system has been improving in recent years. However, when it comes to the transportation of cross-border e-waste, we should refer to various laws and regulations, such as the law of the people's Republic of China on the prevention and control of environmental pollution by solid waste, the law of the People’s Republic of China on the promotion of cleaner production and the law of the People’s Republic of China on the promotion of circular

economy, which lack their own special legislation. In fact, in modern industrialized countries, the growth rate of e-waste is very amazing. According to the 2020 global e-waste detection report released by the United Nations, global e-waste has increased by 21% in the past five years. Among them, China, the United States and India are the world's three major electronic waste producers. China's own e-waste growth rate has been amazing. If developed countries transfer their e-waste to China, the impact on the environment and people's health will not be ignored [8].

3. Suggestions

3.1. Prevention first

First of all, some behaviors endangering the national environment should be avoided in essence. Especially with the continuous development of society, the country cannot blindly develop the economy on the premise of destroying the economy. To build a sustainable society, in fact, China has vigorously strengthened environmental protection in recent years. Factories in many cities have been transferred outside the city, but they still treat the symptoms rather than the root cause, just to hide people's eyes and ears, and eventually pollute the environment in underdeveloped areas. Since we attach so much importance to industry, we should strengthen the prevention of electronic waste that will cause greater harm to the environment. In the education of the people, we should strengthen the education of environmental protection awareness. In fact, most people in developed countries have a strong awareness of environmental protection, and they are aware of the importance of building a sustainable development of society, economy, and environment. In developing countries, people's awareness of environmental protection is low. The reason is that the living standard is still at a low level. The state should vigorously promote some environmental protection industries and create jobs [9].

3.2. Legislative guarantee

In the Customs Law of the people's Republic of China revised in 2021, the provisions on imports and export are becoming more and more strict. The previous filing is revised and registered, and the punishment is strengthened. However, there are still many deficiencies in the regulations on cross-border e-waste. First of all, it is best to unify the definition of electronic waste in legislation. As mentioned above, in fact, different legal documents in China have different statements in the expression of electronic waste, which makes it difficult to rely on one document to make a specific definition in real life, resulting in conceptual confusion. For example, in the law on the prevention and control of environmental pollution by solid waste, waste electrical products; In the administrative measures for pollution control of electronic information products, it refers to electronic information products and other documents, and it is also defined as waste household appliances. In different legal documents, the change of definition leads to the expansion and reduction of e-waste, which is extremely inconvenient to identify e-waste. Secondly, in Article 66 of the law on the prevention of environmental pollution by solid waste, the provisions on the overseas transfer of solid waste are extremely unclear. First, among the relevant responsible parties, there may be many illegal parties in the transfer of cross-border e-waste. How should they bear the responsibility, such as exporters, importers, and carriers, is an important topic worthy of discussion? Second, the amount of fines lacks a sense of hierarchy and is not strong. As we all know, the cross-border transportation of some electronic waste is a huge profit for either party. For the exporter, the transfer of waste with high treatment costs and serious air pollution saves huge expenses, while for the importer, the huge profit of dismantling electronic waste also makes people richer. Therefore, in terms of responsibility, different degrees of pollution should be clarified, and different responsibilities and related fines should be stipulated [10].

4. Conclusions

At present, the phenomenon of cross-border e-waste transfer is still serious, but with the development of economic globalization, ecological globalization, economic globalization, and the awareness of a community with a shared future for mankind have become the mainstream views. Developed countries should not blindly develop their economies at the expense of the ecological environment of developing countries. A large country, such as the United States, should lead the e-waste treatment to be more rationalized and standardized while developing countries should improve the laws and regulations on e-waste to ensure the domestic environment and people's health. Focus on putting forward education from humanism, and put forward feasible suggestions for the power department to improve legislation and how strengthen cooperation with foreign countries. Finally, this paper will lay a foundation for the comprehensive modernization of China's rule of law, promote the better integration of international law and domestic law, and lay a foundation for the legislation of cross-border transportation of e-waste.

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