LEGAL MEASURES ANALYSIS FOR ELECTRONIC WASTE CONTROL AND DISPOSAL IN THAILAND

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Abstract - Electronic waste or electrical appliances and electronic equipment are considered as parts of the present life. The consumer demand for these products will increase due to the current economic situation in a highly competitive environment together with the industrial process that develops technology to make progress, so entrepreneurs need to increase productivity more than before. However, how we can manage if those products are expired or deteriorating. The electronic waste contains toxic substances if it is disposed with other types of waste or not managed properly, and it will cause greater impact on both people and the environment. Currently, there is no specific law to be applied, but there is only Command and Control Approach from other laws that cover the term of e-waste.Hence, this research is an analysis of legal measures used for electronic waste control and management as well as providing guidance on the regulation of electronic waste management in order to be in line with the current problems of Thailand.

Keywords - Legal Measures, Electronic Waste, and Control

I. INTRODUCTION

An expiration and obsolete of these electronic devices or products are the causes that produce all electronic wastes. From statistics, it was found that Situation of the numbers of wastes or hazardous waste in Thailand in 2016, there are numbers of wastes or hazardous wastes around the country about 606,319 tons per year.

If it is considered in average, it will be found that one person generates 7.12 kilograms of waste per year (Napawas Buasang, 2016) and the number of wastes throughout these countries can be classified into hazardous waste from electrical appliances and electronic equipment 393,070 tons per year, and there are other hazardous wastes for 213,249 tons per year. From the statistics, it can be seen that the volume of these products is likely to increase continuously every year.

For Thailand, there are two types of electronic waste sources or product types, consisting of electronic waste generated from the manufacturing process within the industry waste and various household waste, companies, or department stores (Department of Health, Bureau of Environmental Health, 2015, Page 5). At present, in Thailand, there is no law that is specifically enforced regarding measures to manage the carcass production of electrical appliances and electronic devices.

This research is; therefore, a research with the objectives to study, analyze rules regarding laws related to the wastes, electronic appliances, and electronic equipment management as well as providing guidance on the regulation of electronic waste management that is consistent with the problems of Thailand.

II. RESEARCH OBJECTIVES

To study and analyze the legal measures of Thailand in the disposal of electronic waste at present as well as proposing guidelines for the development of laws to be consistent with those of Thailand.

III. SCOPE OF THE RESEARCH

In the research on the analysis of legal measures related to electronic waste disposal, the researcher studied and analyzed laws from the Factory Act, 1992, Hazardous Substance Act, 1992, Enhancement and Conservation of Environmental Quality Act, 1992, Directive on Restriction of the Use of Certain Hazardous Substances in Electronic Equipment (RoSH), and Regulations of the European Union and Waste Electrical and Electronic Equipment Directive (WEEE).

IV. EXPECTED BENEFITS

To acknowledge the current legal measures of Thailand in e-waste disposal and can propose guidelines in the development of the law to be consistent with those of Thailand.

V. RESEARCH METHODOLOGY

In this research study, the analysis of legal measures for electronic waste control and disposal in Thailand is a documentary research, which is a type of research in descriptive research, and it is a research aimed at finding facts that explain the current phenomena of how reality is. Document research is directly related to the study of information from various documents that have already been published. For this reason, documentary research is the study of secondary data (Chuencheewin Yimfuang, 2018).

VI. LITERATURE REVIEW

The research on the analysis of legal measures related to electronic waste disposal has researches and related documents as follows.

1. Electronic waste or waste from electrical and electronic equipment means waste from appliances or equipment which are covering all types of products that use outdated or unable-to-use electricity or magnetic fields to operate. It is effective according to the standards of that device (Pollution Control Department, Ministry of Natural Resources and Environment) or can be said to be a material object that covers almost all types, and the object is driven or operated using electricity, batteries, or the use of magnetic fields in operation. The key factor that results in the increasing amount of these electronic waste. It is considered that wastes are increasing as the world's largest quantities of waste due to advanced technology, causing manufacturers to abundantly invent products to markets.

2. Concepts related to electronic waste disposal measures are as follows:

1. Extended Producer Responsibility (EPR) has principles that emphasize management from the origin of the product with a concept aimed at maintaining the destination, using consumer products to reduce the amount of product wastes returned by the manufacturer. Moreover, it is a concept to reduce the impact on the environment from product wastes because manufacturers can control the product design and marketing of their products. Therefore, there must be the responsibility to manage the toxicity hazard from their products as well. That is, manufacturers can control the design of their products to be more efficient and have a longer service life. This can be considered as a solution to problems that manufacturers design products without taking into account the environmental impact. The reason that it is called to be the increased responsibility of the manufacturer because it is the manufacturer that is responsible for the cost of managing all wastes from the original responsibility for the disposal of these products. It is also the duty of government agencies or local authorities to pay the expenses. In this part, the government agencies brought from the public tax money. Thus, it is considered that, from the beginning, all people were responsible for the management of product wastes (Pollution Control Department, Ministry of Natural Resources and Environment, 2014). In this case, the classification can be classified into 4 types of responsibilities (Greenpeace International, 2014, page 6), which are 1) legal burden, that is, the manufacturer is responsible for the environment in accordance with the provisions of the law, 2) financial responsibility, that is, the manufacturer is responsible for the costs incurred by managing the remains of those products, 3) physical responsibility, that is, the manufacturer has a duty to organize activities to manage the remaining products, and 4) information responsibility, that is, to require manufacturers to be responsible for providing knowledge or providing product information.
2. Polluters Pay Principle (PPP), which is an economic principle that is the starting point of many economic tools such as taxes or fees with the determination of those who cause pollution is responsible for expenses for preventing and controlling pollution. This economic tool is considered as an important mechanism to make various products and reflecting environmental costs in accordance with the principle of polluters pay by changing behaviors of both producers and consumers because the principle of the polluters pay concept is to bring the use the positive environmental cost into the cost of producing goods and services (Janthira Pongrai).

Polluters Pay Concept has two important objectives, which are:

1) To change the behavior of manufacturers and consumers in reducing pollutants, for example, reducing waste generation or wastes, reducing energy consumption, and choosing products that do not cause environmental damages.
2) To create incentives to reduce pollution such as the collection of pollution caused by melting or incineration in industrial plants caused by the recycling process. Polluted air that is released into the environment shall cause the polluters to try to take measures or improve production processes to reduce polluted air.
3) This research studies on the analysis of legal measures for electronic waste control and disposal has studied on the following legal principles.

1. Regulations of the European Parliament and the Council of 27 January 2003 on Waste Electrical and Electronic Equipment or the WEEE, which is a regulation that controls electronic waste in the European Union. This regulation was first announced on January 27, 2003, with this WEEE regulation developed from the increasing responsibility of manufacturers. The important measures are to promote the reuse, recycle, and recovery of the product repeatedly. From the aforementioned, it can be seen that this regulation has a purpose to set measures to prevent the increase of electronic waste (Bureau of Treaties and Strategies, Department of Industrial Works).
2. Directive on Restriction of the Hazardous Substances in Electonic Equipment (RoSH) focuses on the restriction on the use of substances that are toxic to the environment. It

helps disposing of the wastes of that product to cause minimal environmental impact, and there is the prohibition towards member states to sell products containing lead, mercury, cadmium, Hexavalent chromium, Polybromide Biofilm, and Polychromatic, Nephylin, and Ether (Thitikan Ongaravanich, 2012, page 46). This RoSH regulations is similar to the WEEE regulation in regard to the objectives of measures to prevent the increase of electronic waste, and it also covers the same products. The differences are only on the medical equipment systems and measuring or controlling instruments such as smoke detectors, temperature controllers, etc. as they are not covered by RoSH regulations.

VII. RESULTS AND DISCUSSION

The research on the analysis of legal measures related to e-waste disposal found that within Thailand can classify the legal measures in the management of electronic waste disposal into 3 major measures as follows.

1. Command and Control Approach. This measure is a tool that the state uses to directly determine human behavior because it is a legal force and a penalty (Pathipong Wongwiset), which is measure aimed at preventing environmental impacts that may occurred before allowing the operation of the business, and it is the measure that is set up to control involved person with the duty to have a caution and prevent wastes that are caused by the production process or project activities there to exceed the set standard value. Thailand measures focus mainly on the enforcement and control (Pollution Control Department, Ministry of Natural Resources and Environment), for example:

- Factory Act, 1992 that was prescribed about the control of factory operations had authorized the government officials to issue licenses and extension of licenses for certain types of factory operations, and the supervision of factory operations. The type or size of the factory could be determined to be set in any area or not allowed to set in any area. In addition, this act focuses on the control of industrial waste. From the study, it was found that the Factory Act, 1992 was unable to control the villagers who had separated the products, including unregistered waste sorting plants or recycling plants.
- Hazardous Substance, 1992 is a law that controls the production, import, export, or possession of hazardous materials. There are lists of dangerous substances, including electrical appliances and the used electronics. Nevertheless, with the announcement of the Ministry of Industry, 2003, except for the manufacturer, exporter, possessor, and importer for personal use (not more than 2 devices per item) are not need to register and request for a license on commercial importer, and it must be complied with the rules and conditions as announced by the Department of Factory. The scope of control is wider than the Factory Act, and it oversees those who are in the non-factory possession and it is used to supervise the import-export as well. The purpose of the law is to focus on production control, moving, and possessing of hazardous materials specified in the law (mainly focusing on requesting permission and chemical substances), not focusing on promoting waste reduction and waste utilization.
- Promotion and Conservation of National Environmental Quality Act, 1992 is a law that the National Environment Board is authorized to set environmental quality standards in various matters. According to Section 78, schedule for collection, transportation, and disposal of hazardous wastes and other pollutants shall be in accordance with that law. In Section 79, it is defined that, in the absence of specific laws, the Minister shall, with the advice of the Pollution Control Committee, have the authority to issue Ministerial Regulations to determine the type and category of hazardous waste and the rules as well as methods for hazardous waste management appropriately.

From the above, it can be seen that, currently, Thailand focuses on compulsory and controlled measures in electronic waste control and disposal. Such measure has a set of punishment processes (Pathomphong Wongwiset) to prevent, suppress, and correct. It can be divided into 3 characteristics according to the conditions of use, such as.

1) Administrative enforcement measures which gives authority to government officials to supervise the private sector to comply with the law. If the private person violates the law, government officials can exercise that administrative authority.
2) Criminal enforcement measures is to determine the offense and penalty. In particular, it is under the criminal law enforcement measure, especially, imprisonment and criminal penalties to be a strict measure to force people to obey and comply with it.
3) Civil liability measures such as The National Environmental Quality Promotion and Preservation Act, Section 96, defined civil liability to those who cause pollution until causing others to be harmed to life, body, or health, the owner or occupant of the pollution source is obliged to take responsibility for compensation or damages.

2. Economic Incentive Approach. The use of economic incentives or economic tools in the operation by creating motivation to be aware of the real cost of resources, and it is motivated to reduce pollution which can divide economic

incentives in the case of electronic waste management as follows (Thitikan Ongaravanich, 2012, page 35).

1) Deposit-Refund System is a measure that purchasers will receive a refund if the purchasers bring the used product back to the redemption center.
2) Product Surcharge measures by collecting products that cause pollution.
3) Measures for user fees or user charges are customary charges for pollution management

According to studies, it is found that Thailand has implemented legal measures on the basis of the polluters at present, and the principle of increased liability of the manufacturer is very small as it is usually in the form of fees, resource usage, service fees, and administrative fees.

CONCLUSIONS

From the study and analysis of the legal measures of Thailand in electronic waste disposal, it was found that mostly, it is still focused on the Command and Control Approach by passing the Act on electronic waste management by roundabout, and there is no law that has direct use. In addition, there is also a measure of punishment measures to prevent suppression of violators, criminal compulsory measures, and civil liability measures. For the Economic Incentive Approach, now, Thailand has implemented legal measures on the basis of Polluters Pay Principle, and the principle of increased liability of the lesser manufacturers. Anyway, at present, even Thailand does not have any laws that are specifically applicable to electronic waste management, the Pollution Control Department, The Ministry of Natural Resources and Environment has prepared a draft bill for the management of the creation of electrical appliances and electronic products, A.C....., which it can be seen that it has the key provisions applicable to producers. It specified the duty to the manufacturer to establish the product redemption center. This measure increases the responsibility for manufacturers as when the manufacturer has a duty to set up a product redemption center, and he must be a collector, receiver of the returned goods, and all expenses to operate the product redemption center. When studying the analysis, it was found that this measure is in line with the WEEE of EU that adopted the principle of increasing production concept of the manufacturer to be used, and it is in accordance with the RoSH regulations in the areas of electrical appliances and electronic equipment.

SUGGESTIONS

1. The government should push the economic incentive approach to increase both the main measure of pollutants and the principle of the increased liability of manufacturers.
2. There should be a revision of the draft law on the management of electrical appliances and electronic equipment in respect of economic incentive measures before being enacted and applied it as a law.

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