

Polyethylene Terephthalate (PET) bottle is considered as material with recycling value and commonly used in beverage industry around the world. In Indonesia, the amount of recyclable PET bottles in the market is considerably high. However, this economically valuable materials from post-consumption are disposed and recovered at a really low rate. Waste management system for this material recovery has insufficient capacity and no separation treatment. Aside from that condition, there are non-sustainable and non-eco-friendly practices such as littering, waste burning, and disposing to the rivers which harm the environment and consequently cause economic loss from defensive expenditures.

In Germany, the treatment of PET bottle waste is done through a system called Deposit-Refund System (DRS) in which the holders of the product waste are obliged to pay deposit to the seller and this deposit will be returned if the waste is taken-back for recycling or appropriate manner. Since there is mandatory deposit money on the purchase, the buyers are financially motivated to get the deposit money back. This system generated high collection rate of packagings and eliminate the problem of packaging littering in Germany. Furthermore, the DRS called *Deutsche Pfandsystem* promotes closed loop or circular economy for beverage industry by using secondary material resulted from the collected packaging waste, and therefore, the use of virgin material made of crude oil can be reduced while at the same time promoting environmental protection.

This Master Dissertation dicusses the potential implementation scheme of *Deutsche Pfandsystem* in Indonesia as the solution of recyclable waste problem by conducting qualitative anaylsis of the system, breaking it down in detail, and assess the possibility as well as the potential implementation by adjusting the system with condition in Indonesia. This study found that *Deutsche Pfandsystem* is an IT-and capital intensive system in which the involvement and contribution from related industry such as manufacturing industy, retailers and other final distributors are essential. The implementation in Germany has shown positive economic rationale for the investor, however due to environmental, economic, and social differences, the system needs to be adjusted technically. The result suggests that this system is feasible to be implemented in Indonesia with certain adjustments along the stakeholders so it would fit with the condition. It is expected that under DRS would rise collection rate or PET bottle, stimulate recycling industry growth, promote circular economy, increase employment, and reduce negative externalities generated by pollution.

Keywords: PET bottle, Deposit-Refund System, Extended Producer Responsibility, waste management, externalities, Sustainable Material Management, circular/closed-loop economy, material recovery, recycling