

Section I

Introduction





1. Introduction

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Background and purpose

In developing countries, waste collection is not widely available outside of urban areas. Open burning and dumping of waste in rivers and canals and on unused land are still common methods for waste disposal. Because of a lack of source separation, hazardous waste such as infectious waste and used batteries are usually mixed with municipal solid waste. Furthermore, recyclables and scraps which contain valuable materials are commonly recycled using environmentally unsound methods, such as acid leaching and open burning to extract metals, resulting in serious environmental and health risks. In order to reduce the environmental problems associated with weak waste management and recycling in developing countries, it is necessary to improve policies, raise awareness of stakeholders, and support the introduction of environmentally sound and economically sustainable waste management technologies and systems.

In several developed countries, the policy concept of Extended Producer Responsibility (EPR) has inspired the design of successful waste management legislation. The concept was introduced in order to lessen the financial burden of local governments to collect and treat wastes, especially those that are difficult and costly to treat or recycle in a safe manner. This was achieved by putting the financial responsibility for treatment or recycling on the producers of those products. The EPR approach also creates an incentive for producers to redesign their products so that they can more easily be treated at the end-of-life stage.

Since EPR-based policies have achieved a certain success in increasing recycling rates and reducing landfill disposal, the EPR concept is now attracting a lot of attention from developing countries and countries with economies in transition. Concrete policy discussions on the potential value and feasibility of EPR-based legislation are currently under way in several East Asian and Southeast Asian countries.

This report summarizes some of the experiences gained in EPR implementation with special attention to the challenges related to introducing EPR in developing Asia. The following sections provide a brief presentation of the EPR concept and set the scene for the rest of the report. The structure and key messages of the report are then presented.

Extended Producer Responsibility

EPR is a basic policy principle that promotes the 3Rs (Reduce, Reuse and Recycle) of products with a particular focus on the responsibility of producers. Under an EPR scheme, a producer's responsibility is extended to cover the post-consumer stage of their products. This forces a producer to not only be concerned with making a product, but also with the appropriate treatment and disposal of the product at the end of its useful life. This means that producers have responsibility for appropriate recycling, as well as final disposal of the product.

The basic idea of EPR was first proposed by Professor Thomas Lindhqvist of Lund University in Sweden at the beginning of the 1990s. Since 1994, the OECD secretariat has initiated a study on EPR with financial support from the Japanese government. Based on the study, an EPR guidance manual for governments was issued by the OECD secretariat in 2001. This EPR guidance manual defines EPR as "an environmental policy approach in which the physical and/or financial responsibility of the producers for their products is extended to the post-consumer stage of the product lifecycle".

Two common features of EPR policy are that: (1) it completely or partially transfers physical and/or financial responsibility for waste management from local governments to upstream producers; and (2) it gives incentives to producers to incorporate environmental considerations into their product designs. While EPR is intended to reduce the amount of materials going to landfills, it is also aimed at promoting environmental considerations at "upstream" stages, which include product design and material selection. If producers must pay for waste treatment of their products, there is a built-in incentive to make products less wasteful.

In this sense, EPR provides the missing link between policies that promote greener product designs and policies that promote environmentally sound waste management and recycling. Together, such policies can help construct an efficient and economic recycling mechanism.

It is important to point out that EPR is a general policy principle and not a detailed recipe. There are many different ways in which producers' responsibility for their products can be extended and how this responsibility can be imposed. The following two subsections discuss two key points to consider when developing EPR-based policies: who is to be regarded as the producer and what instruments should be used to implement the responsibility. The final subsection illustrates how EPR can be put into practice by describing policies in Germany and Japan.

Defining the producer

Under an EPR program, producers are assumed

to be in the best position for improving products by determining product design and material selection and having access to the most precise information on their product(s). Producers must also exercise strong leadership throughout their product supply chain in order to establish an efficient recycling system and to promote environmentally sound product design (e.g. less wasteful, easy to recycle, and longer product life). However, the identification of the producer is not as straightforward as it might seem.

In the case of durable consumer products, such as home appliances and automobiles, brand owners and/or importers are both eligible to be the “producer” in an EPR program (OECD EPR manual 2001). Importers are subjected to the EPR program in the country where they are operating. However, in the case of packaging products, the filler company is eligible rather than the packaging producing company.

The strong influence of the “producer” to other actors in the product chain is a critical factor to establish an efficient recycling system under an EPR scheme. Transparency and smooth communication among concerned actors are essential.

In developing countries’ context, however, the situation is more complex and is often difficult to identify “producers”. For example, in developing countries, second-hand products are imported and sometimes repaired and reassembled in order to reuse parts for other products.

Policy instruments for implementation
There are several policy instruments that can

be applied to implement an EPR program. They include product take-back requirements; performance standards; economic instruments; and waste disposal regulations.

Product take-back requirements

Producers have responsibility to take back their products in the post-consumer stage. The target of the take-back could be the whole product or a part of the product.

Performance standards

Performance standards determine the extent to which producers are required to recycle their post consumer products. Standards for minimum recycled content, for instance, impose on the producer a minimum rate or amount of recycled materials against the total resource inputs. This standard gives an incentive to producers so that they choose a production process and/or products that are easier to reuse and recycle.

Economic Instruments

There are also economic instruments that are considered effective in implementing EPR. They include deposit/refund schemes, advance disposal fees (ADF) and material taxes.

Deposit/refund schemes involve the consumer paying a deposit when purchasing a product and then receiving a refund of the deposit when returning the post-consumer product, the container, or the packaging. The aim is to facilitate product take-back.

Advance disposal fees (ADF) involve charging

consumers at the point of purchase for the cost of treating and recycling post-consumer products (including the cost for take-back). The collected fees are then used to cover the costs of treatment and recycling. This system can also influence consumers' choices of products because the fees can be explicitly added onto the product's price. This system alone will not achieve EPR because the treatment costs are paid by the consumer. Therefore, it is necessary to impose the physical responsibility onto the producer to ensure that the post-consumer products are properly treated and recycled.

Material taxes are usually imposed on raw materials that have high environmental risks. Therefore, these taxes will encourage a shift to the use of more environmentally-friendly materials. Tax revenues could also be used for the collection, separation, proper treatment, and recycling of the products concerned. Again, in this system, it is essential to impose physical responsibility onto the producer.

In addition to the policies described above, other possible measures to strengthen EPR systems include regulating the disposal of waste (e.g. landfill taxes imposed at a metered rate, stiffer punishments for illegal dumping) and promoting environmentally friendly designs and products through tax benefits and subsidies. Eco-labels and awareness raising can also be implemented to help expand markets for environmentally-friendly products, while the promotion of innovative business models, such as servicizing, can promote toward dematerialized economy.

Examples of EPR policies

Since OECD began its work on EPR in 1994, almost every member country has implemented one or more EPR programs. These programs vary considerably due to a number of factors, such as the difference in the products or waste streams covered, instruments used, and the sharing of responsibilities among the players in the product chain and other stakeholders.

Packaging in Germany

A pioneering EPR system is the *Duales System Deutschland (DSD)* in Germany. The Packaging Ordinance of 1991 imposed a minimum recycled content requirement for containers and packaging on businesses (e.g. manufacturers, distributors) that use containers and packaging. This includes those outside the country that export to Germany.. Businesses that are subject to the ordinance have two choices under this system. The first is to pay commission fees to the DSD company, which was jointly established by a group of target companies. The DSD company then collects and recycles the containers and packaging. The second choice is for businesses to collect and recycle the containers and packaging by themselves using deposit-refund systems. Most of the target businesses have chosen the first option.

DSD issues the license to the contracting businesses for the use of the accreditation label "Der Grüne Punkt" on their containers and packaging. DSD will then only collect and recycle the containers and packaging bearing this label. Containers and packaging that do not have this

label are collected by local governments as a paid service, which encourages participation in the DSD system.

The DSD company is a Producer Responsibility Organization established with participation of the producers concerned in order to carry out efficient collection and treatment of containers and packaging.

Automobiles in Japan

Another example of a successful EPR system was created through the Law for the Recycling of End-of-Life Vehicles (ELVs), enacted in July 2002 in Japan. The law, one of many recycling laws introduced in the country, stipulates appropriate roles to be taken by relevant business entities. Automobile manufacturers and importers (hereinafter referred to as “manufactures”) are obliged to collect and recycle (deconstruct in the case of CFCs) air bags and shredder residues generated in the treatment process of ELVs. In addition, rules were established for collecting and delivering ELVs between collecting companies and shredding companies, thereby ensuring that a recycling network would be established.

Recycling expenses of manufacturers are paid by automobile owners as a recycling fee when they purchase new cars. Those who had already purchased their automobiles before the enforcement of the law are requested to pay the fee prior to their first car inspection. Fund management corporations administer the recycling fee, which is claimed by manufacturers when they recycle/dispose of shredder residues. The recycling fee is decided and announced by the manufacturers, but the government can

recommend changes in case the proposed fees are considered too high.

Introduction of EPR policies in developing Asia

In addition to China, Thailand, and India (See Chapters 5, 6 and 7, for details) , Vietnam, Malaysia and Indonesia are also considering the introduction of EPR. Vietnam revised the Environmental Protection Law, which in Article 67 states that “owners of production, business and services establishment shall be responsible for recovering the following expired or discarded products: radioactive sources used in production, business or services; batteries, accumulators: electronic electric equipment for civil and industrial use; lubricants, grease and packages hard to decompose in the nature; drugs and chemicals for industrial, agricultural and aquatic use; medicines for human use; means of transport; tubes and tires and others”.

In 2007, Malaysia enacted the Solid Waste and Public Cleansing Management Act (Act 672), which stipulates that the government can place responsibility for the collection of post-consumer products on the manufacturer, assembler, importer, or dealer (Article 102).

In May 2008, Indonesia enacted the Law on Rubbish Management, which applies the principles of EPR. Under article 15 of this law, producers are responsible for managing packages and/or products which are neither biodegradable nor easily decomposed by natural processes. The government is still considering applying EPR to packaging waste, e-waste and others.

In this context, it is useful to share lessons and experiences among Asian countries on the possibilities, the challenges and the preconditions for applying EPR to some specific wastes.

Outline of the report and key messages

The first section of the report analyses the achievements made and major challenges faced in the EU, Japan, Korea and Taiwan, all of which have had EPR-based policies in place for several years. The second section reviews the current situation and the most recent policy discussions on EPR in China, India and Thailand. The third section looks at EPR from a regional perspective and discusses challenges brought about by increasing international trade. It also includes an example of a private company which has voluntarily established a regional system for end-of-life treatment of its products. A concluding chapter briefly summarizes the key findings of the report, provides some recommendations for policy makers, and identifies a number of topics for further research.

The report highlights the importance of increasing international trade in used and end-of-life products and recyclable materials. It shows that this international trade may undermine effective implementation of national EPR systems and weaken national legislation. The report indicates that national EPR regulations may have even contributed to increasing international trade by making domestic treatment more costly. It is concluded that in order for national legislation to be effective, EPR-based regulations need to be

supported by complementary policies.

Another main topic of the report is the applicability of EPR to developing countries. EPR regulations require institutional infrastructure for registration, reporting, and collection of fees, as well as adequate enforcement capacity. Experiences of introducing EPR in developed countries, such as the EU directive on waste electronic and electrical equipment, clearly show that this process is complex, challenging and time-consuming. The report presents experiences of developing Asian countries and discusses how the EPR concept could be made applicable to social, economic and cultural conditions of these countries.

Finally, the report shows that EPR may have different meanings to different countries and could be implemented in a multitude of ways. The chapters analyzing EPR-based legislation in Japan, Korea and Taiwan and the chapters on China, India and Thailand make this point very clear. It is concluded that there is no single right interpretation of the EPR principle. Indeed, the way to implement EPR needs to be carefully adapted to the situation in each country.

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