

Suggestions on extended producer responsibility mechanism in Vietnam from international experiences

Minh Khoa Nguyen*

Ministry of Natural Resources and Environment, 10 Ton That Thuyet, My Dinh Ward, Nam Tu Liem District, Hanoi, Vietnam

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Abstract:

Extended producer responsibility (EPR) serves as a policy instrument, ensuring that manufacturers and importers of specific products bear responsibility for their collection, recycling, and disposal once consumed, thereby alleviating the public financial burden of waste management whilst enhancing recycling rates. Registration, an integral component of EPR systems, denotes the identification of obliged manufacturers and importers, and the accumulation of sales data for products subject to EPR. The principal functions of the registry encompass: delineating manufacturers and importers with EPR obligations; reporting aggregated data; and overseeing the adherence of manufacturers and importers in executing their extended responsibilities. This paper encapsulates the experiences of several countries with respect to the organisation and administration of registration agencies for manufacturers and importers of packaging, proffering potential recommendations for Vietnam.

Keywords: extended producer responsibility, plastic packaging, register.

Classification numbers: 2.3, 7

1. Introduction

Recognising the significance of collective efforts to address the global plastic waste crisis, Vietnam has pledged to undertake robust actions towards reducing plastic waste to safeguard its ecological environment. In 2017, Vietnam formally joined 127 countries that approved the United Nations Environment Council Resolution of the United Nations Environment Programme concerning plastic waste and ocean microplastics. On 4 December 2019, the Prime Minister issued Decision No. 1746/QĐ-TTg, signifying the national action plan on ocean plastic waste management until 2030, and subsequently, on 20 August 2020, Directive No. 33/CT-TTg was released, emphasising the strengthening of plastic waste management, reuse, recycling, disposal, and reduction. Recognising the enhancement of policies

and legislation on plastic waste management as one of the priorities, the EPR - the obligation of manufacturers and importers to recycle waste - has been included in the new Law on Environmental Protection (2020). Further, ancillary documents detailing the Law have been promulgated to guide the implementation of EPR for obliged manufacturers and importers.

EPR is an environmental policy grounded in the “Polluter pays” principle, obligating manufacturers and importers of certain products (or so-called obliged producers) to be responsible for the collection, recycling, and disposal of post-consumer products. This not only reduces the public financial burden of waste management but also enhances recycling rates. The adherence to EPR is meaningful and necessary in the current context of Vietnam to

*Email: ngmikh@gmail.com

improve packaging waste management efficacy.

To ensure that the EPR scheme operates transparently and fairly, it is essential to establish a registry of obligated companies. Such a registry would identify these companies, thus curbing non-compliance. Globally, this registry may be managed by a government agency or by obligated companies themselves, albeit under state regulatory supervision. Determination of which companies must register, the data they must provide, and its accessibility, along with specifications on public and confidential data, should be clearly stated in the relevant legislation. Understanding and studying international experiences in operating EPR systems for packaging and the roles and responsibilities of stakeholders in the system will aid the development and implementation of Vietnam's EPR regulations.

EPR, as defined by the Organisation for Economic Co-operation and Development (OECD), is an environmental policy approach in which producers' responsibility extends to the post-use stage of a product's life cycle [1]. EPR mechanisms require producers to assume responsibility for collecting waste products and sorting them prior to implementing disposal measures, ideally recycling. EPR programmes enable producers to fulfil their extended responsibilities by providing the necessary financial support and/or by managing the organisational and operational aspects of recycling waste from local governments, individually or collectively through intermediary organisations, known as producer responsibility organisations (PRO).

EPR mechanisms for end-of-life product management emerged in several OECD countries in the late 1980s as a solution to the mounting volume and complexity of waste management challenges. Based on the "Polluter Pays" principle, EPR policy shifts the burden of managing specific end-of-life

products from the public sector and particularly local governments, to the producers. This encourages producers to (re)design their products and packaging to simplify waste management and to avoid potentially hazardous materials.

A study conducted by the OECD (2016) identified over 400 different EPR schemes, most of which are in developed countries [2]. About 90% of existing EPR systems have been implemented in the European Union (EU) and North America. All EU member states have established EPR systems for the four waste streams identified in the EU Directive: packaging, batteries (BAT), end-of-life vehicles (ELVs), and waste electrical and electronic equipment (WEEE). In North America, EPR programmes cover a wide range of products and are primarily designed and implemented at the local, state/provincial levels, with the US leaning towards tools such as deposit-return systems (DRS) and advance disposal fees (ADF). In Latin America and the Caribbean, countries like Chile, Mexico, Brazil, Argentina, and Colombia have gradually introduced their first EPR systems. The current landscape of EPR in Asia varies considerably: advanced economies such as Japan and South Korea have established regulatory EPR systems, while emerging economies like India and Indonesia are beginning to develop EPR programmes. In Africa, EPR and waste management policies are still in the early stages of research and implementation.

As an environmental tool that has been globally applied over the past few decades, EPR obliges manufacturers and importers of products and packaging to assume responsibility for their collection, recycling, and disposal. This not only reduces the financial burden of waste management but also enhances recycling rates. The mandatory implementation of EPR is meaningful and crucial in Vietnam's current context for improving waste management efficiency and alleviating public

budget strain. Simultaneously, EPR serves as a vital tool for realising the goal of developing a circular economy by accelerating efforts towards closing the material cycle and managing resources efficiently and sustainably.

2. International experiences on EPR registration mechanism for plastic packaging recycling

2.1. Overview of the position and role of the EPR registry

Registration is the identification of companies that are obligated to participate in EPR systems and to collect data on sales of products subject to the EPR. This is also a key factor in identifying manufacturers/importers that are obligated to but do not comply with EPR regulations (called free riders).

Globally, registration is generally handled by public authorities, such as in Finland where paper manufacturers must register with the Pirkanmaa Centre for Economic Development, Transport and the Environment, or by quasi-public bodies, such as with the Alberta Recycling Authority in the Canadian province of Alberta [3]. Conversely, the process can be managed by PROs, entities that execute recycling responsibilities on behalf of producers. An instance of this is the UK, where registration information is collated by PROs (known as Producer Compliance Schemes in the UK) and subsequently forwarded to the Environment Agency or equivalent in England, Scotland, Wales and Northern Ireland [4].

The OECD Guidelines on EPR (2016) defines the purpose of the Registry as providing PROs with the means to collate information required to set fees and to identify free riders. Directive 2002/96/EC of the Council of Europe (EC) on waste of electrical and electronic equipment since 2003 mandates Member States to establish a register of manufacturers and

importers to receive registration information and manage data [5].

The registry performs multiple roles, such as identifying manufacturers and importers with obligations within the EPR system, reporting collected data, and depending on its competencies, enforcing compliance where necessary [6].

The register can be operated by a state agency or by an organisation representing companies with obligations. In a scenario where there is only one PRO in the EPR system, this PRO can also carry out the registry function. However, with multiple PROs working concurrently, a separate register is required (e.g., a register in a system with many PROs is called a clearinghouse).

2.2. Examples of EPR register models in some countries

In Germany, the Central Agency (ZSVR in German) is responsible for the registration of packaging product manufacturers, the receipt and verification of data reported by manufacturers, importers (or obliged producers), and PROs, and monitors companies participating in the system. The Central Agency's registration, data reporting and all related activities are free for the first manufacturer/importer, being funded by approved systems and industry-specific solutions.

Manufacturers and importers are subject to several basic conditions:

- Manufacturers and importers must register with the Central Agency prior to marketing packaging materials.
- Manufacturers and importers must enlist business-to-consumer packaging materials within the EPR system before introducing them to the commercial market.
- At minimum, once annually, manufacturers and

importers must report the volume (total weight) of packaging materials they distribute in the market, accompanied by specifics of the packaging material. Reports must be concurrently submitted to their chosen compliance scheme and the Central Agency.

If a producer fails to register, or registers incorrectly, they may incur a fine of up to €100,000 for each instance of non-compliance. Non-participation in any of the compliance systems could result in a fine of up to €200,000.

In Austria, the packaging registry or clearinghouse, known as VKS, is a non-profit organisation supervised by the Austrian Environment Agency (UBA). VKS's primary role is to ensure equitable competition among all packaging collection and recycling systems active in the market [7]. Its services include handling and analysis of packaging waste, monitoring system participants, maintaining a register of collection points, and distributing information to end consumers. VKS is funded through the fees levied on the responsibility organisations of the producers. The organisation comprises a CEO and five employees, a supervisory board with five members, and an advisory committee with seven members.

In the UK, the activities of the packaging EPR system registry are more limited due to the structure of the tradable credit system. The National Waste Packaging Database (NRPD) operates as a registry within the state Environment Agency. Rather than assigning collection routes, the NRPD's primary function is to facilitate information flow. The NRPD registers manufacturers, certifies recyclers, issues PRN and PERN credits, manages reports, and monitors companies evading obligations (free riders).

In Denmark, the registry (referred to as DPA-System)¹ is managed by the Danish Environment Agency and is financed from the registration fees

of manufacturers and importers. DPA-System's responsibilities include: designing and operating statutory producer registers; receiving statutory registrations from all obligated manufacturers and importers; signing up for collective responsibility programmes (PROs); receiving and registering information from local authorities about local collection sites; calculating and collecting statutory fees; receiving volume reports from manufacturers and importers; providing information services to all stakeholders [8]. Organisational structure wise, DPA-System is currently managed by an eight-member executive board approved by the Minister of Environment (2020). It comprises a chairman appointed by the Minister of Environment and seven members introduced from seven typical industry associations. All registered manufacturers and importers must pay a fee to DPA-System. These fees fund the operation of the DPA System. Fees include registration fees, annual fees, and case management and handling fees for special services, if applicable. The fee is set by the Ministry of Environment once a year. Manufacturers/importers do not pay an annual fee for the first year as no reported volumes have been marketed in the previous year. Thus, the number of products of the first year that are put on the market is used as the basis of calculation for the first year and the second year with fees for year 1 and year 2 respectively. Therefore, they do not have to pay twice the annual fee and the first year's annual fee is waived.

In Sweden, from 2021, all packaging producers must register with the Swedish Environmental Protection Agency. The packaging producer must pay an annual enforcement fee to the Swedish Environmental Protection Agency of 500 SEK (Swedish Krone). Producers who delay providing the Swedish Environmental Protection Agency with regulatory information relevant to the previous year

¹Danish Producer Responsibility.

may be subject to an environmental penalty fee of SEK 10,000.

In the Netherlands, the National (W)EEE Register, an organisation that registers electrical and electronic equipment, is responsible for establishing and managing registrations for discarded electrical and electronic equipment in the country. This organisation is mandated by the government to carry out these tasks in line with the WEEE Directive (derived from the European WEEE Directive). It is an independent organisation, registered with the Dutch Chamber of Commerce and funded by the manufacturers. The Register collects and aggregates data for reporting to the Ministry of Infrastructure and Environment and for monitoring preparation by the Dutch Inspector General for Environment and Transport. The Register provides detailed information on: the total amount of electrical and electronic equipment put on the market in the Netherlands; the total amount of electrical and electronic equipment collected and recycled; the reuse of materials from electrical and electronic equipment; and the results related to the achievement of the recycling targets set out in Annex V of Directive 2012/19/EU.

In Chile, regarding registration, micro companies (defined as businesses whose annual income from sales and services and other business activities does not exceed 2,400 UFD in the preceding year, equivalent to €73,445) are exempt from all obligations under the law; they are not even required to provide information. Small producers (less than 300 kg of packaging/year) are also exempt from EPR liability, but they must provide information about the quantity of packaging they put on the market.

In Korea, the Korea Environment Corporation (KECO), a statutory public organisation, oversees many activities in the EPR chain for all products subject to EPR. These include collecting data on

product sales, monitoring and approving recycling results, and administering low-interest loans to small and medium-sized recyclers [9]. Furthermore, KECO supervises the activities of the Korea Resource Circulation Service Agency (KORA), a non-profit organisation established in 2013 from PROs based on the Act on the Promotion of Saving and Recycling of Resources 2013. KORA undertakes support activities for the EPR system, including managing EPR financial contributions from manufacturers and importers to pay for recyclers, supporting and monitoring the recycling process to achieve the required recycling rates, facilitating the resource cycle (collection, sorting, recycling, etc.), searching for markets with recycled materials, supporting initiatives, and raising awareness to achieve the goal of a zero-waste society. In terms of funding, KORA obtains its operating funds from the Korean Recycling Organisation - KPRC, that is, from the contributions of manufacturers and importers [10].

3. EPR policy development process in Vietnam

The development process of the Extended EPR policy in Vietnam began with the integration of EPR regulation within the 2005 Law on Environmental Protection. At that time, the primary impetus for developing the EPR was to devise a financial solution to the environmental degradation caused by informal recycling in craft villages. The regulation stipulated the recall of certain consumer products for recycling and disposal. Subsequently, the Prime Minister's Decision No.16/2015/QD-TTg on the recall and treatment of discarded products was enforced. This law was applied to five categories of products, namely: (i) batteries and accumulators; (ii) electrical and electronic equipment; (iii) all types of lubricants; (iv) tubes and tyres; and (v) end-of-life vehicles. However, the implementation proved to be limited due to the absence of specific regulations, guidelines, and sanctions. In particular, the time

limit for recalling and handling products applied to end-of-life vehicles from 1 January 2018 and the remaining groups from 1 July 2016. However, the actual implementation results are limited due to the lack of specific regulations and guidelines as well as sanctions.

In an effort to rectify the previous limitations, the Law on Environmental Protection 2020 was amended, introducing two articles regulating the responsibilities of manufacturers and importers, these being Article 54 and Article 55. Specifically, regulations on responsibilities for recycling products and packaging of manufacturers and importers (Article 54) and responsibilities for waste treatment of manufacturers and importers (Article 55).

In particular, within the recycling responsibility system, producers and importers have the option to fulfil their responsibility in one of several ways: self-recycling, individual contracts with service providers, authorization of third parties to perform obligations (such as PROs), or by financial contribution to Vietnam Environmental Protection Fund (VEPF).

Regarding waste treatment responsibilities, manufacturers and importers are mandated to make a financial contribution to the Vietnam Environmental Protection Fund. Going forward, it will be crucial to enhance awareness of the EPR among all stakeholders in the packaging chain in Vietnam. This includes management, obligated companies, waste collectors, recyclers (both formal and informal), and consumers of packaged products.

The Ministry of Natural Resources and Environment (MONRE) has subsequently submitted two decrees to the Government for approval: Decree 08/2022/ND-CP, which elaborates on a number of articles from the Law on Environmental Protection, and Decree 45/2022/ND-CP, which details sanctions for administrative violations in the field

of environmental protection. Furthermore, MONRE has promulgated Circular No. 02/2022/TT-BTNMT, providing implementation details for certain articles of the Law on Environmental Protection, including the regulations to guide the extended responsibilities of manufacturers and importers for products and packaging.

4. Some suggestions for EPR implementation in Vietnam

International experience indicates that countries employ various management approaches for EPR programmes across different product types. Despite the diversity in approach, the primary state management functions within the EPR system typically encompass policy formulation and assessment, operation, stakeholder consultation, producer registration, certification of PROs, fee collection and disbursement, coordination of service provision, monitoring of manufacturers, PROs, recyclers, localities' technical and financial performance, and ensuring enforcement.

The roles of stakeholders in a typical EPR system can be summarised as follows: public agencies that formulate, implement, and assess policy, as well as monitor and certify participants; PROs that organise and manage the collection and recycling of discarded products on behalf of manufacturers and importers; registries or clearinghouses that collect data and allocate service delivery space (usually when there are multiple competing PROs); waste management companies and local governments providing collection and treatment services; and in developing economies, the prevalence of the informal recycling sector.

It is crucial to encourage and involve the participation of consumers and communities in promoting sustainable behaviour, particularly through waste segregation at source and the selection of eco-friendly products. The efficacy of the entire

system largely hinges on waste collection from the household level or equivalent, ideally sorted waste from recyclable and organic sources.

In EPR systems where multiple PROs compete, an intermediary coordinating organisation is necessary to ensure that collection is conducted where needed, prevents only valuable waste from being collected, and ensures that competing PROs do not duplicate service coverage, collecting end-of-life waste from the same service area or collection points. Clearinghouses are typically independent non-profit organisations, or occasionally government agencies, that help to resolve unforeseen issues arising from competition amongst PROs. Clearinghouses can also act as registries by collecting data from manufacturers or service providers, offering proprietary data management mechanisms, or identifying evasive producers (“free riders”). Additionally, in certain EPR systems, ancillary activities such as outreach, waste prevention initiatives, related research and development, anti-litter campaigns, and so on may be assigned to clearinghouses [11].

In terms of position and role, the establishment of the National EPR Council and the Vietnam EPR Council Office has emerged from the necessity for an organisation to operate the extended responsibility system of producers effectively, as well as in line with practices in countries that have implemented EPR mechanisms. This is especially relevant for setting recycling rates, registering with manufacturers and importers, identifying non-compliance cases, developing and managing databases from producers, and supporting related activities such as information dissemination, research funding, and more.

With the registry model, after examining and analysing relevant experiences, it is apparent that the clearinghouse model performs two principal roles: one as the registration agency for producers

and PROs, and the other as the coordinator of information and activities when there are multiple competing PROs. This model is popular and offers numerous advantages for effectively implementing the EPR system, particularly with packaging, as well as with other product streams. Therefore, the establishment and organisation of the Vietnam EPR Council Office should align with the role and function of the clearinghouse as seen in the aforementioned countries (Fig. 1).

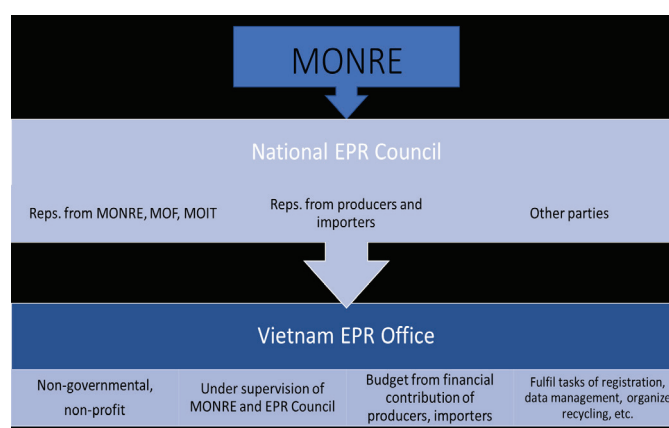


Fig. 1. Proposed model of the National EPR Council and EPR Office.

The Vietnam EPR Council Office will perform several functions including the collection of registration information, the collation of data from producers, PROs, and other necessary parties, coordinating system operations and identifying producers evading their obligations (free riders) for handling violations. Furthermore, based on its roles and duties, the Vietnam EPR Council Office will execute its responsibilities to support and propose to the National EPR Council and specialised management agencies (notably, the MONRE). It will undertake tasks such as receiving, synthesising, and organising the verification of applications from agencies and organisations wishing to receive financial support for waste recycling, collection and treatment activities. It will also submit these to the EPR Council, notify and sign support contracts with agencies, organisations receiving financial

support, and organisations that support recycling and waste treatment for manufacturers and importers. Additionally, it will execute related activities such as propagating awareness, research, cooperation with relevant domestic and foreign units and organisations. These are also functioning many registries or clearinghouses globally are currently overseeing.

5. Conclusions

EPR is an environmental policy designed to ensure that manufacturers and importers of products into the domestic market take responsibility for the collection, recycling, and disposal of their products when they become waste. This thereby reduces the financial burden of waste management while increasing recycling rates. Mandatory EPR implementation is significant and necessary in the current context of Vietnam, to enhance waste management efficiency and reduce the strain on public budgets.

The establishment of the National EPR Council and the Vietnam EPR Council Office stems from the need to create mechanisms to effectively operate the extended responsibility system of producers. Countries around the globe have already implemented EPR mechanisms, particularly in the setting up of the system for registering manufacturers and importers, identifying cases of non-compliance, developing and managing a database from the producers, and supporting other related activities such as propaganda, information dissemination, financial support for recycling and waste treatment. Their experiences suggested invaluable lessons to Vietnam on developing the EPR scheme in general and registration in particular.

COMPETING INTERESTS

The author declares that there is no conflict of interest regarding the publication of this article.

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