

EaPGREEN

Partnership for Environment and Growth



Programme carried out with the
financial assistance of the European Union

Creating Market Incentives for Greener Products

ROADMAP FOR POLICY ACTION



Overview



Promoting growth that is environmentally sustainable requires well-designed institutions and policy instruments that are effective in achieving environmental objectives without imposing excessive burdens on the economy. There is growing international recognition that economic instruments can be effective in stimulating a shift to less-damaging forms of production and consumption while providing producers and consumers with flexibility in making these adjustments.

The European Union's Eastern Partnership (EaP) countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) struggle with a number of environmental challenges, including the rapid growth of the use of motor vehicles and associated emissions of carbon dioxide and local air pollutants, as well as the lack of sound waste management solutions for end-of-life vehicles and their parts; the exponential increase of municipal solid waste from packaging and electric and electronic equipment; the indiscriminate use of pesticides and fertilisers in agriculture, etc. At the same time, the market for greener alternatives to environmentally harmful products in these countries is very small.

Economic instruments can help address those challenges. They can stimulate changes in consumption and production as well as lead to the creation of new jobs and employment opportunities. Investments in new "cleaner" technology can be an important source of employment and business development. Where economic instruments generate revenues, the appropriate deployment of these revenues can also make a significant contribution to enhancing incomes and growth.

The Policy Manual "Creating Market Incentives for Greener Products" was developed within the framework of the "Greening Economies in the Eastern Neighbourhood" (EaP GREEN) programme which is principally funded by the European Union and implemented by the OECD in partnership with the UNEP, UNIDO and UNECE. It provides guidance to EaP countries on how to design or reform economic instruments related to environmentally harmful products in order to provide incentives for both reducing pollution and introducing greener products.

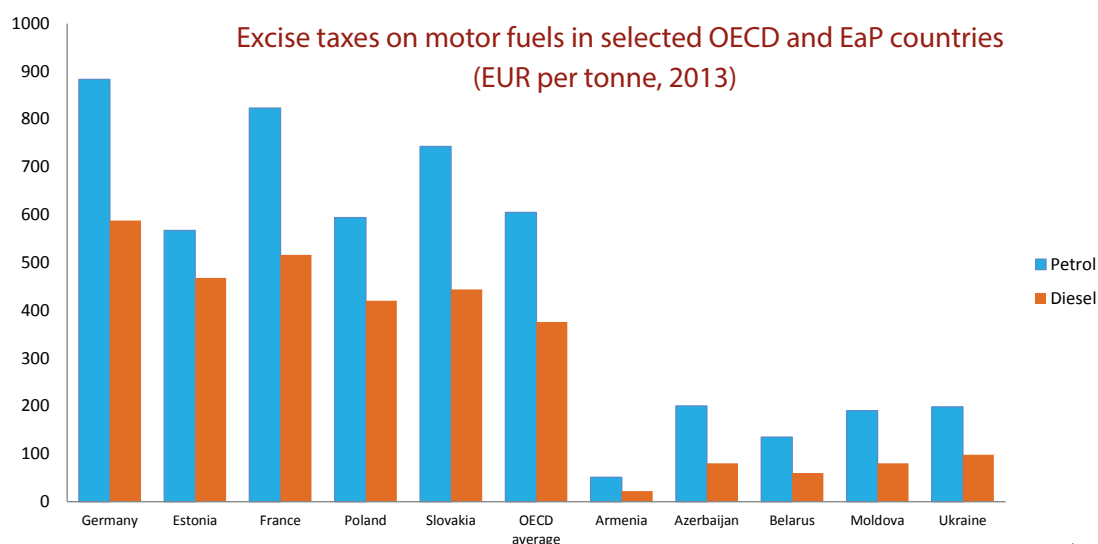
In developing such instruments, governments should:

- **SET CLEAR POLICY OBJECTIVES** in terms of inducing positive changes in the behaviour of producers and consumers.
- **MATCH INSTRUMENTS AND PRODUCTS PRUDENTLY** to ensure that the selected instruments are capable of achieving the desired environmental improvements.
- **TARGET A SMALL NUMBER OF PRODUCT CATEGORIES** with carefully designed instruments in order to maximise their behavioural impact.
- **THOROUGHLY ASSESS THE WIDER POTENTIAL IMPACT OF EACH INSTRUMENT** on public administration and budgets, business and consumers, and the overall functioning of the market economy.
- **ENGAGE A BROAD RANGE OF STAKEHOLDERS** - ministries of environment, economy and finance, as well as the business community, non-governmental and academic institutions – in designing the instruments and overseeing their implementation.

Types of instruments

Product-related instruments are those which regulate the sale and use of products, rather than those directed at environmental aspects of production. Within the broad pattern of existing applications of product-based economic instruments, the instruments fall into two broad groups: instruments directed at achieving behavioural changes in consumer purchasing behaviour (product taxes), and instruments directed at achieving changes in waste generation and waste management (deposit-refund systems and extended producer responsibility schemes).

- **Environmentally related product taxes** are levied on the sale of a product or group of products either specifically to discourage production or consumption of those environmentally harmful products or with the primary purpose of revenue generation.
- **Tax differentiation** is a way to adapt existing revenue-raising taxes to reflect environmental objectives by increasing the rates of tax on “dirty” goods and/or reducing the rates of tax on “green” goods to achieve behavioural changes in production or consumption.
- **Deposit-refund systems (DRS)** are used to recover product packaging, drinks containers, or end-of-life products, especially those which would be hazardous or toxic within the general waste stream.
- **Extended Producer Responsibility (EPR)** is a scheme under which various obligations are imposed on producers, either individually or collectively, to recover and recycle end-of-life products.



PRODUCT-RELATED ECONOMIC INSTRUMENTS IN EASTERN PARTNERSHIP COUNTRIES

All EaP countries have excise taxes on motor fuels, although at much lower rates than the OECD average. Armenia and Moldova use environmentally related taxes for long lists of product categories. There are ongoing efforts to establish EPR schemes in Belarus, Moldova and Ukraine. Other countries are also interested in expanding the use of product-related economic instruments. As part of the EaP GREEN initiative, the OECD is conducting pilot projects in Moldova and Ukraine to assist these countries in the design and implementation of environmentally related product taxes and EPR schemes.

Impact of instruments

BEHAVIOURAL CHANGE

A crucial early step in developing policy towards product-based economic instruments is selecting instruments which are appropriate to the relevant environmental problems and policy objectives, and which are capable of achieving the required environmental improvements.

In the case of **product taxes and environmental tax differentiation** this is achieved through the effects on the pricing of products and the profits of firms. If the product tax is passed forward to consumers in higher product prices, and if it is levied at a sufficiently high rate, then consumers will be incentivised to reduce their consumption of dirty goods and to switch to cleaner, untaxed alternatives.

In the case of **DRS**, the principal behavioural change comes through the incentive that the refund of the initial deposit gives for returning the used product or container. In some cases (e.g. batteries) the aim is to ensure secure and safe collection and disposal of substances or products that would otherwise be hazardous or harmful within the general waste stream. In other cases (traditionally, bottles), deposit-refund arrangements ensure separate collection of substances or products to permit cost-effective re-use, recycling or materials recovery.

With **EPR**, a range of behavioural changes are possible and may be stimulated depending on how the system is designed. Producers may be motivated to set up efficient systems for recovery, consumers may be encouraged to return products through these systems, and so on. In addition, some EPR schemes aim to incentivise waste-reducing product innovation directed at achieving a shift towards the production and sale of “greener” products, with lower end-of-life disposal costs.

IMPACT ON PUBLIC BUDGETS

A second significant motivation for the use of some product-related economic instruments may be the revenues that could be generated. In particular, a **product tax or charge would generate revenues** which could be used for some particular purpose (e.g. an environmental fund), as an additional contribution to the general public budget, or could permit tax cuts elsewhere in the economy. On the other hand, the administrative costs of product taxes may be large relative to the revenues generated.





The operating costs of environmentally related product taxes are broadly proportionate to the number of firms that are subject to each tax: the more firms are involved, the higher the administrative burden. Tax differentiation, which may raise little revenue (if some tax rates are reduced while others are increased), may significantly add to the complexity of tax administration, and hence to its cost.

Both DRS and EPR are intended to divert significant waste flows from the publicly-financed general waste stream, so that **savings will be made on municipal waste collection and disposal**. The administrative costs of these two instruments are shared by private operators running the schemes and the government doing monitoring and enforcement.

IMPACT ON BUSINESS

Product-related economic instruments can create business opportunities in two main areas. Firstly, the **expansion of a market for cleaner products** is a positive counterpart to the loss of sales that would be suffered by firms producing the taxed “dirty” products. Secondly, DRS and EPR create **business opportunities in waste management and recycling**, especially for firms offering waste collection and processing services, and for producers and users of recycled materials. For example, almost 70% of used tyres are recycled or reused in the United Kingdom, while in Ukraine this figure is less than 8%.

To prevent adverse effects on **national firms vis-à-vis international competitors**, it is desirable for imported goods to be subject to any environmentally related product taxes, deposit-refund systems or EPR obligations on the same basis as domestic production.

IMPACT ON PRICES AND INFLATION

All economic instruments targeting environmentally harmful products would be expected to increase, to some extent at least, the price of such products. This effect is part of the mechanism by which instruments such as product taxes and EPR enhance environmental sustainability through changes in producer and consumer behaviour. However, the potential inflationary impact of environmental product taxes and EPR should not be exaggerated. With the exception of taxes on motor vehicles and motor fuels, which need careful timing, these instruments would have rather small one-off effects on prices.

Choice of instruments

Each of the product-related economic instruments has particular strengths and weaknesses that make it appropriate with respect to certain policies and products, but may reduce its applicability elsewhere. A key initial task of policy development is to identify instruments which are appropriate for the particular environmental problem under consideration.

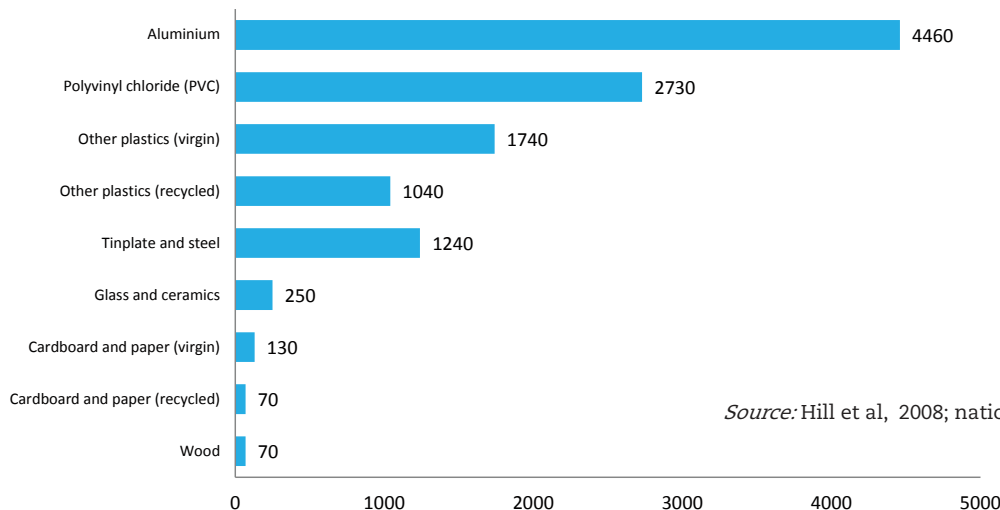
Key areas of potential application of product-based economic instruments

	Product taxes	Differentiation of existing taxes	Deposit-refund systems	Extended producer responsibility
Motor vehicles	●	●	●	●
Motor fuels	●	●	●	●
Motor engine oil, lubricating oils & greases	●	●	●	●
Bottles, cans, other drinks packaging	●	●	●	●
Plastic shopping bags	●	●	●	●
Other packaging	●	●	●	●
Batteries	●	●	●	●
Disposable products	●	●	●	●
Pesticides and chemical fertilisers	●	●	●	●
Electric and electronic equipment	●	●	●	●
Car tyres	●	●	●	●

Notes: green = suitable; yellow = worth considering; red = not effective or not applicable.

Design and implementation: Product taxes and tax differentiation

Taxes on packaging materials in Denmark
(EUR per tonne, 2013)



Source: Hill et al, 2008; national government website.

- Give priority to the removal of environmentally harmful subsidies before introducing environmental taxes;
- Confine taxes to a small number of priority areas where there is a clear environmental benefit from reduced production or consumption of the taxed product;
- Wherever possible, introduce environmental incentives into the structure of existing product taxes (such as fuel excises), since this will avoid the high costs of setting up and running new taxes;
- Levy any new environmentally related product taxes at an early stage in the production chain, so that there are relatively few taxpaying firms, which will help to reduce administrative costs;
- Ensure that environmentally-related product taxes apply equally to domestic production and imported goods to avoid distorting competition between domestic manufacturers and importers;
- Where practicable, implement environmentally related product taxes as an amount per unit or quantity rather than as a percentage of selling price, since this will link the tax more closely to environmental damage;
- Avoid introducing environmental taxes which are too low to change behaviour. Generally, product taxes of less than 10% of the selling price of products are unlikely to have sufficient impact on behaviour to justify the additional costs of operating the tax; and
- Ensure that tax rates are predictably updated in line with inflation, since otherwise the environmental incentives could be rapidly eroded.

The experience of OECD countries suggests that meaningful inter-departmental co-operation between ministries of environment, economy and finance put in place at an early stage greatly improves the functionality and political sustainability of environmentally related product taxes. Reforming the system of environmental taxes would require changes to the Tax Code and, possibly, to the framework environmental law.

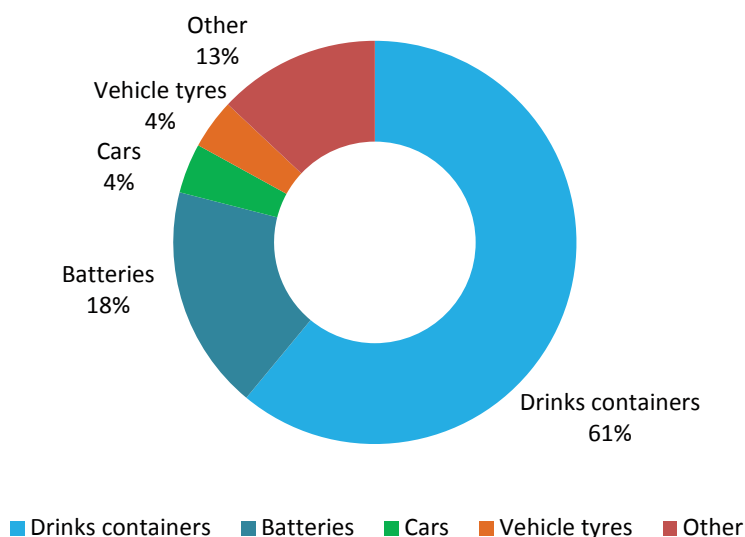
Design and implementation: Deposit-refund systems

- Ensure that legislation defines clearly the scope of the DRS: which products are covered and which firms are required to participate in the scheme. To avoid distortion of competition, the scheme should apply equally to domestic producers and importers.
- Decide whether to impose obligations on each producer to operate a DRS for their products, or alternatively to establish a common industry-wide DRS covering all producers. The latter should be preferred, since a requirement for each firm to operate its own DRS can place a heavy burden on smaller producers.
- Specify in the legislation the deposit rate to be charged on each product and procedures to ensure that the deposit rate is updated regularly in line with inflation.
- Where a DRS is operated on an industry-wide basis, establish either a public or industry-owned non-profit organisation that would set the operating rules of the system, require firms to account for deposits collected and refunds made, and monitor compliance by firms with the system's requirements.

The requirements for legislation for DRS depend on the underlying reason for introducing the DRS. Where DRS is used to manage items which generate hazardous wastes, the need for legislation (e.g. changes to the Law on Waste and its implementing regulations) and procedures for compliance monitoring is much more extensive than in other cases.



Commodities covered by deposit-refund systems in OECD countries (by product type)



Source: Tasaki et al, 2010.

DEPOSIT-REFUND SYSTEMS FOR DRINK CONTAINERS IN SELECTED OECD COUNTRIES

Finland. Industry-run arrangements for DRS were set up in response to the threat that a packaging tax would otherwise be introduced. There are a number of “closed” systems run by producers or retailers which collect and recycle bottles and cans from their own customers. In addition, four separate agencies run “open” deposit-refund systems for particular container types, accepting containers used by all producers.

Germany. Various producer-run systems collect reusable beer and carbonated water bottles. In addition, a universal DRS for single-use containers was established in 2003. Retailers selling drinks in disposable containers are required to take back packaging of the same material as they sell, though for smaller retailers this obligation is limited to the brands they sell themselves. The system has achieved high rates of return and recycling, of the order of 98%, but does not appear to have slowed the steady trend away from refillable bottles.

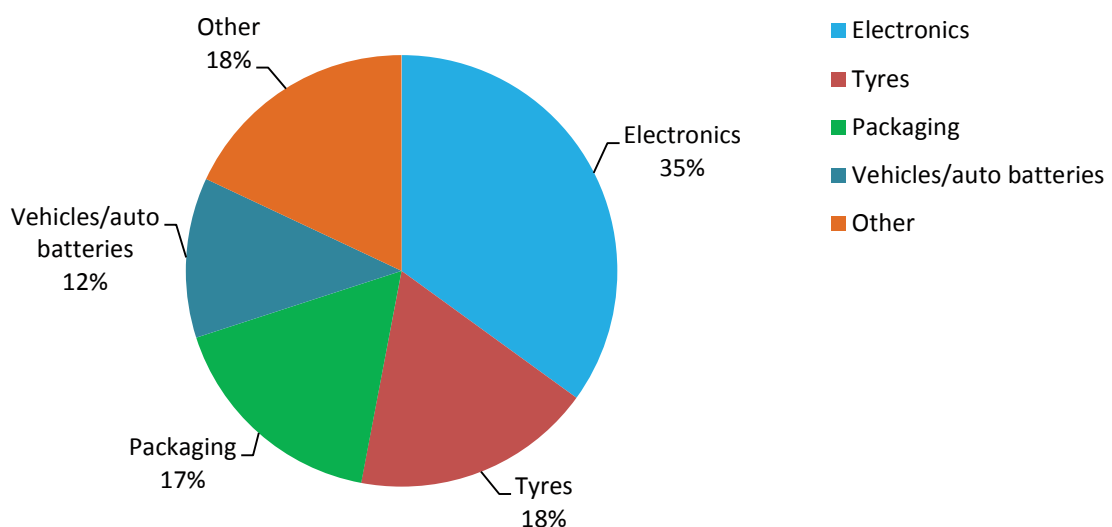
Norway. A deposit-refund system for single-use plastic bottles and cans is run by an industry-owned non-profit company. A reduced excise tax is applied if higher rates of return are achieved. About 95% of bottles and 94% of cans are collected through this system.

Source : Hill et al (2008); EEA (2011)

Design and implementation: Extended producer responsibility

- **Select those products to be covered by EPR** – such as waste electric and electronic equipment (WEEE), packaging, or end-of-life vehicles – where there is a clear benefit from separate management of waste. EPR should apply to both domestic producers and importers.
 - **Establish a Producer Responsibility Organisation (PRO)** through which firms can collectively fulfil their obligations regarding the collection and recycling of the items covered by the scheme.
 - **Make all producers and importers in the industry** (except those that satisfy the specified conditions to opt out of the PRO) **share ownership of the PRO and the costs of its operation**. Financial contributions should be based on a simple formula, such as each firm's sales or imports of the products in question over the preceding year.
 - **Set collection and recycling performance targets** for the PRO, establish significant financial penalties for the PRO and its shareholder firms if these targets are not met.
 - **Allow firms to opt out of the collective PRO** and to establish their own alternative collection arrangements, either acting individually or by setting up another PRO, provided that they can demonstrate that they achieve the same targets for collection and recycling rates.
- An EPR system should be established in the Law on Waste or special legislation, possibly with corresponding amendments to the framework environmental law. It will only operate effectively if the legislation stipulates sanctions for firms failing to achieve the mandated targets. Appropriate sanctions should include monetary penalties that are significantly higher than the potential profits that firms could make through non-compliance.

Enhanced producer responsibility schemes in OECD countries
(by product type)



Source: Kaffine and O'Reilly, 2013.

EXAMPLES OF EXTENDED PRODUCER RESPONSIBILITY SCHEMES IN OECD COUNTRIES

EPR for packaging in the Czech Republic. EKO-KOM is the PRO for packaging waste, although producers can choose individual producer responsibility. EKO-KOM collects producer contributions of EUR 20 per tonne of packaging put on the market, reimburses municipalities for the collection of household packaging waste, and contracts waste management companies to ensure proper treatment and recycling of the collected packaging. Producers of industrial packaging are responsible for collection and treatment. The recycling targets are differentiated by material (e.g. 70% for glass and 37% for plastic) and are increased every year. The 91% overall collection rate and 71% recycling rate were achieved in 2012.

EPR for batteries in Austria. Four PROs (one for-profit and three non-profit organisations) are responsible for arranging the take-back and treatment of waste portable batteries, and all of them are also part of the WEEE scheme. A fifth PRO covers only automotive batteries. A producer not participating in a PRO system may get a fine of double the amount they would have to pay to a PRO. Portable batteries are collected at municipal collection facilities or at the point of sale. A collection rate of about 50% has been reached for portable batteries.

EPR for WEEE in Sweden. The WEEE collection system is based on two schemes: (1) an agreement between Swedish municipalities and El-Kretsen, an organisation of producers of electronic products, that the municipalities will bear all costs of collecting electric waste while El-Kretsen will pay for their treatment and recycling; and (2) a collection scheme operated by the Association for Recycling Electronic Products with collection points in its members' stores. Several producers have individual schemes. Producers adhering to a PRO must pay an annual fee based on the number of products sold and their recycling costs.

EPR for waste oils in Canada. The Western Canada Used Oil Program (operating in four provinces) employs EPR to ensure recovery and safe disposal of used motor oil as a way to prevent damaging discharges into sewers, watercourses and groundwater. Sales and imports of oil are subject to a fee, or "environmental handling charge", which is then used to finance a "return incentive" paid to authorised collectors when used oil is collected and recycled (e.g. into heating oil). The scheme has close similarities with a conventional DRS, with the significant exception that refunds are paid not to consumers but the enterprises that collect used oil, providing them with an incentive to maximise the amount collected.

Source :BIO Intelligence Service, 2013.

Selected further reading

- EC (2012), Use of economic instruments and waste management performances, Final Report, 10 April 2012, http://ec.europa.eu/environment/waste/pdf/final_report_10042012.pdf.
- OECD (2006), The Political Economy of Environmentally Related Taxes, Organisation for Economic Co-operation and Development, Paris, <http://dx.doi.org/10.1787/9789264025530-en>.
- OECD (2013), Taxing Energy Use: A Graphical Analysis, Organisation for Economic Co-operation and Development, Paris, <http://dx.doi.org/10.1787/9789264183933-en>.
- EU-sponsored EPR Guidance Study project: <http://epr.eu-smr.eu>.

