

**СЕКЦІЯ 4.
ЕКОЛОГІЧНІ АСПЕКТИ РОЗВИТКУ БІЗНЕСУ**

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ENVIRONMENTAL PROTECTION COSTS

Environmental protection expenditure should show the efforts being made to prevent, reduce and eliminate pollution resulting from the production or consumption of goods and services. The paper presents the basic definitions and survey results of environmental protection expenditure in European Union. The main source which was used to the analysis is the Database of Statistical Office of European Union – Eurostat.

Definitions and methodology

Environmental protection is defined as all activities directly aimed at the prevention, reduction and elimination of pollution or any other degradation of the environment.

Environmental protection expenditure are the economic resources devoted by units to environmental protection. According to UE methodology environmental protection expenditure consists of outlays and other transactions related to (EPER):

- investment expenditures – capital formation and the buying of land (investment) for environmental protection activities and users' outlays for buying environmental protection products;
- current expenditures – inputs for environmental protection activities (energy, raw materials and other intermediate inputs, wages and salaries, taxes linked to production, consumption of fixed capital);
- transfers for environmental protection (subsidies, investment grants, international aid, donations, taxes earmarked for environmental protection, etc.).

Environmental protection is defined according to the Classification of Environmental Protection Activities (CEPA 2000), which distinguishes nine different environmental domains:

1. Protection of ambient air and climate
2. Wastewater management
3. Waste management
4. Protection and remediation of soil, groundwater and surface water
5. Noise and vibration abatement
6. Protection of biodiversity and landscapes
7. Protection against radiation
8. Research and development (R&D)
9. Other.

Environmental expenditure have been divided, according to the property sectors, into:

- public sector – government institutions (central public administration, regional and local governments as well as public organizations and institutions mainly classified in NACE, Rev. 2 as 84),
- business sector – commercial enterprises, financial and insurance institutions as well as non-commercial institutions (all activities except NACE 84),
- producers specialized in environmental protection (NACE 36-39) whose main activity is providing services for environment protection, mainly waste collection disposal and sewage treatment,
- household sector – there is no clear distribution into investment and current expenditure in this sector; the specificity of household activities combines all the types of expenditure together.

Surveys of environmental protection costs are conducted in all UE countries, accordingly to EU methodology (Eurostat 2005a, Eurostat 2005b, Eurostat 2007). Data on environmental expenditure are collected by the statistical office of the European Union – Eurostat through the Joint OECD/Eurostat Questionnaire on Environmental Protection Expenditure and Revenues (EPER).

Total environmental protection costs in UE

The basic indicators used to analyse the dynamics of environmental expenditure are: contribution to Gross Domestic Product (GDP), expenditure per inhabitant.

The level of total environmental protection expenditure in 2012 was highly variable among countries of European Union. Austria has one of the highest indicator in European Union – environmental protection expenditure per inhabitant was 1209 euro/inhabitant). In other EU countries this indicator came to 250 – 802 euro per inhabitant – Figure 1.

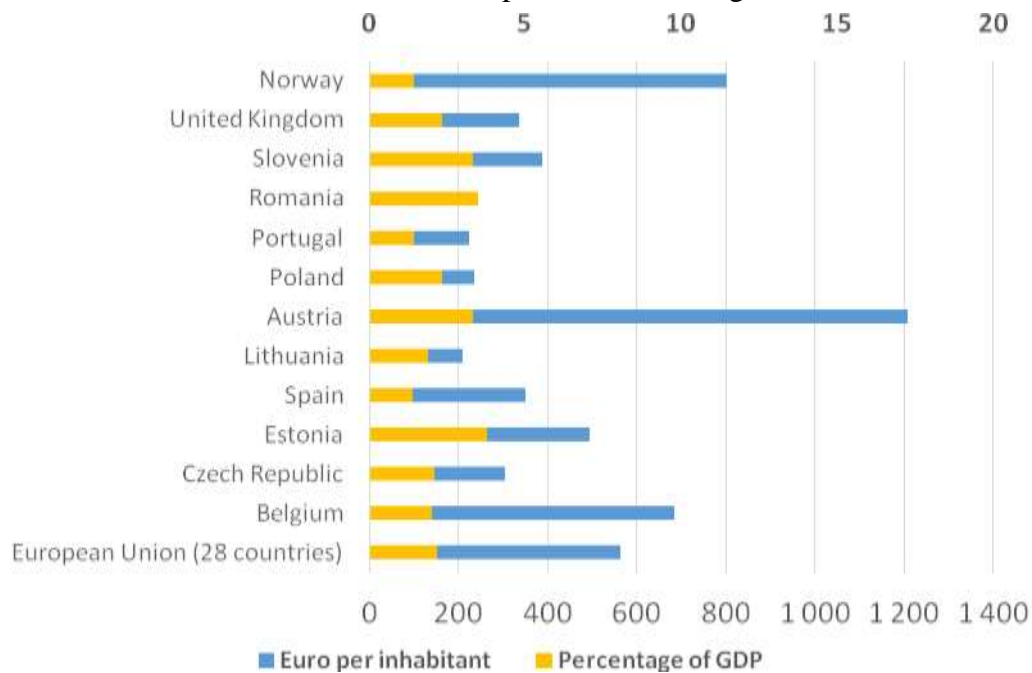


Figure 1. Total environmental protection expenditure per inhabitant and as percentage of GDP in 2012

Source: Database of Eurostat, 2016-06-15.

The biggest share of environmental protection expenditure in 28 countries of UE in the period 2003-2013 was contributed by specialized producers – 1,0-1,17% share of GDP. Public sector was contribution to Gross Domestic Product at the level 0,62-0,75% and industry – approximately 0,4% of GDP. In 2013, the leading environmental domain in 28 EU countries was waste management (1,12% of GDP). The other important area of environmental expenditure was the wastewater management which accounted for 0,55% of GDP and other domains which accounted for 0,4% of GDP.

Environmental protection investments expenditure

Following the methodology applied in European Union (SERIEE, 1994), the investment expenditure includes end-of-pipe and integrated investments:

– the end-of-pipe investments (pollution treatment) – they do not affect in the production process itself (the production may be carried out without this kind of investment), but they reduce and dispose pollutants generated in the production process – Figure 2,

– integrated technology (pollution prevention) – they lead to reduction of generated pollution through the modification of technological processes which makes the production cleaner and more environmentally friendly – Figure 3. When a new production process is introduced, the environmental expenditure refer to the expenditure that outstrip the costs of cheaper and in working order, but less environmentally friendly equipment.

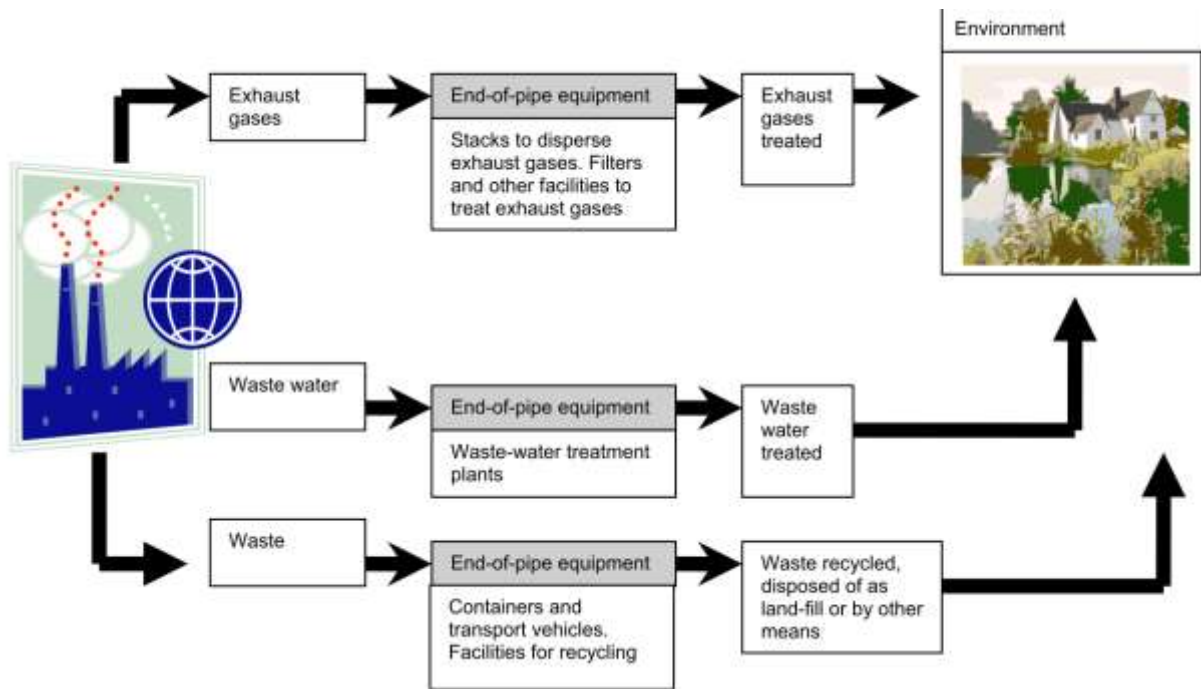


Figure 2. Pollution treatment investment

Source: (Eurostat 2005a), p. 25.

“Pollution treatment” is defined as methods, practices, technologies, processes or equipment designed for collecting and removing pollution and pollutants (for example air emissions, effluents or solid waste) after their creation, treating and disposing of the pollutants, and monitoring and measuring the level of pollution. Pollution treatment mainly involves the use of “end-of-pipe” methods, techniques or equipment, for instance, air emission filters, waste-water treatment plants, waste-collection and -treatment activities (Eurostat, 2005a).

“Pollution prevention” is defined as methods, practices, technologies, processes or equipment designed for preventing or reducing the pollution created at the source thereby reducing the environmental impacts associated with the release of pollutants and/or polluting activities. Prevention of pollution can be an integral part of the production process. Prevention of pollution may involve various types of activity, for example:

- modifying equipment or technology,
- choosing new, improved technology,
- reformulating or redesigning products,
- substituting cleaner and/or renewable raw materials,
- changing practices, (improving housekeeping, maintenance, training or environmental management (Eurostat 2005a, p. 14).

Pollution prevention investments are more desirable according to the principle of environmental policy the European Union – the principles of precaution, prevention and rectifying pollution at source. However, they are not always applicable. The public sector and specialised producers invests mainly in the end-of-pipe equipment (for example, sewage systems).

Environmental protection current costs

Current expenditure on environmental protection consist on: labour costs, payments of rents, use of energy and other material goods, purchases of services, where the main purpose is to prevent, reduce, treat or eliminate pollutants and pollution or any other degradation of the environment resulting from the operating activity.

Current expenditure spend on environmental protection in EU countries represent a majority of total environmental protection expenditure – 82%. The main environmental domain of current costs in the EU in 2012 was waste management (61%) and wastewater management (20%). Other environmental protection activities, like general administration, education, information and environmental management had 18% share.

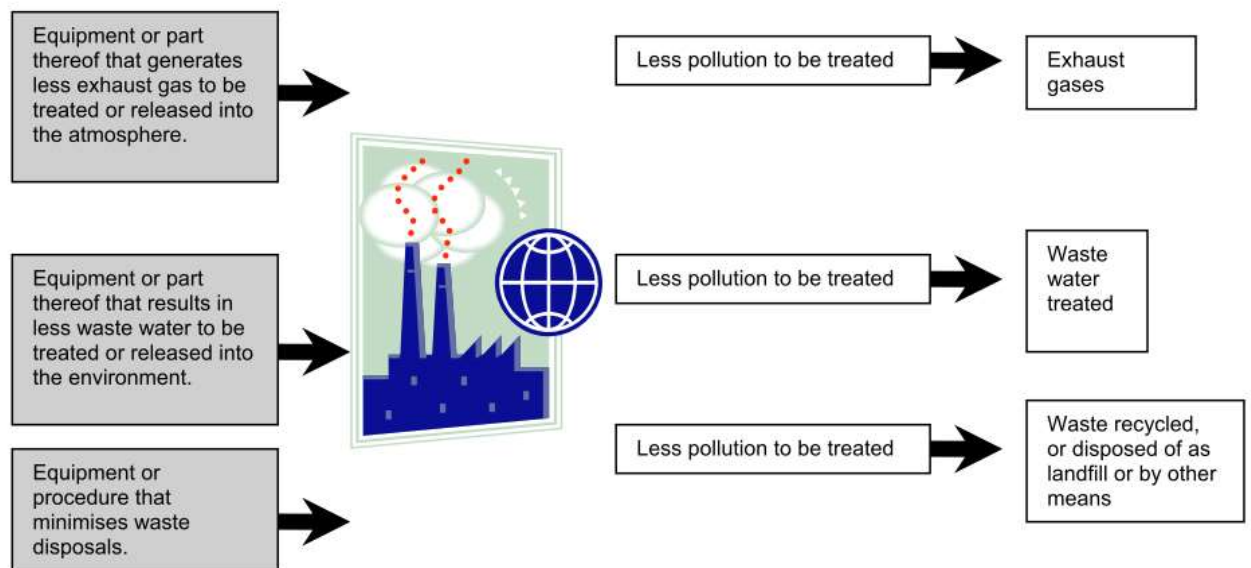


Figure 3. Pollution prevention investment

Source: (Eurostat 2005a), p. 26.

5. Conclusion

European Statistical Office, Eurostat, have collected data not only on environmental protection (air pollution, energy, water consumption, wastewater, solid waste) but also data of an economic nature, such as environmental protection expenditure. This data enable policymakers to consider the environmental impacts of economic activities, for example on resource consumption, air or water pollution, and waste production, and to assess actions (such as investment and current expenditure) that may be carried out to limit the causes and risks of pollution. The analysis of spending on environmental protection has a strategic interest and allows an evaluation of environmental policies.

References

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