This article presents results of the 2018 data collection on environmental protection expenditure accounts (EPEA) provided by European Union (EU) Member States with reporting obligation (Cyprus was granted a derogation) and selected non-EU countries. It provides information on the EU’s expenditure on prevention, reduction and elimination of pollution or any other degradation of the environment and covers the total spending by a country (i.e. by its households, businesses and government) on environmental protection services, e.g. waste and wastewater management, protection of biodiversity, as well as protection of soil, research and development, education and training.

In 2018, the EU Member States spent EUR 297 billion on environmental protection, which amounted to 1.9 % of gross domestic product (GDP). Purchases of environmental services by households and by government, and investments made by producers of environmental services, and by corporations to reduce environmental impacts of their activities, accounted for nearly two thirds of the spending (61 %). Detailed information on composition of national expenditure on environmental protection ("NEEP"), on contributions to NEEP of different sectors and shares of various transactions is provided in the first three sections of this article.

The environmental services are produced both by private corporations and by government. The share of each sector in the total output of environmental services depends on national arrangements and varies across EU Member States. For further information on production of environmental protection services by environmental domain (according to the classification of environmental protection activities (CEPA 2000), see section "Production of environmental protection services" of this article.

More information about the supply of environmental protection products is provided based on the environmental goods and services sector accounts data (EGSS): see the articles on environmental economy — employment and growth.

**National expenditure on environmental protection**

National expenditure on environmental protection ("NEEP") measures the resources used by resident units in a given period for protecting the natural environment. It is calculated as a sum of current expenditure on environmental protection (EP) activities and investments for EP activities, including net transfers to the rest of the world.

In 2018, EU-28 national expenditure on environmental protection of all EU Member States amounted to EUR 297 billion, according to Eurostat’s estimates.

From 2006 to 2018, NEEP at current prices increased overall by 22.1 %, rising on average by nearly 2 % each year (see Figure 1, left scale).
As a percentage of gross domestic product (GDP), EU-28 NEEP remained relatively stable between 2006 and 2018. In 2006 the share amounted to 2.0%, a small increase to 2.1% of GDP is observed in 2009, mainly as a result of a large GDP contraction during the financial crisis and economic recession, stabilizing at around 1.9% from 2015 onwards.

Estimates by institutional sectors highlight that corporations made the largest contribution to NEEP, and accounted for 54% of total NEEP in 2018. The expenditure of general government and non-profit institutions serving households (NPISH) as a whole, and of households accounted respectively for 24% and 22% of total NEEP in 2018.

Final consumption expenditure on environmental protection

In 2018, households and general governments’ purchases of environmental protection services for final use (final consumption expenditure) amounted to EUR 116 billion, accounting for nearly two fifths of total NEEP.

Over the half (57%) of the EU-28 final consumption expenditure on environmental protection services, around EUR 66 billion, was covered directly by households. The remaining 43%, around EUR 50 billion, was spent by general government and non-profit institutions serving households (NPISH) to produce environmental protection services which were then provided to all citizens for free or at a price that is not economically significant.

Between 2006 and 2018, households’ expenditure on environmental protection expenditure services increased by nearly 50% over the entire period, which is equivalent to an average annual growth rate of 3.4% (see Figure 2, left scale). Still, environmental protection accounted for a very small proportion of households’ spending (less than 1%), and this share remained stable over the recent decade (see Figure 2, right scale).

General government and NPISH expenditure on environmental protection services increased by 7.5% from 2006 to 2018, i.e. on average 0.6% per year. In 2018 final expenditure of environmental protection services accounted for 1.4% of the total final consumption of these sectors.
Figure 2: Final consumption expenditure on environmental protection services, EU-28, 2006–2018 (EUR million and % of total final consumption expenditure by sector). Source: Eurostat (env_ac_cepsgh), (nasa_10_nf_tr) and (nama_10_fcs).

Figure 3 presents the share of the environmental protection expenditure in the final consumption of general government and NPISH sectors across the EU. In 2016, the last mandatory year for data reporting, the EU-28 share amounted to 1.5%, and for the large majority of Member States the share ranged between 1% and 3%.

Figure 3: Final consumption expenditure on environmental protection services by GG and NPISH, 2016 (% of GG and NPISH total final consumption expenditure). Source: Eurostat (env_ac_cepsgh) and (nama_10_gdp).

For households, the EU-28 share of final consumption expenditure on environmental protection services in their total final consumption amounted to 0.8% in 2016 (see Figure 4).
Environmental protection investments

In 2018 EU-28 invested EUR 64 billion (21 % of NEEP) into assets essential to provide environmental protection services (e.g. wastewater treatment plants, vehicles to transport waste, and acquisitions of land to create a natural reserve or cleaner equipment for producing with less polluting emissions).

About EUR 37 billion (58 % of total environmental protection investments) was spent by corporations, both the specialist providers of environmental protection services (e.g. private companies dealing with waste collection and processing and with sewerage) and other corporations, to develop and purchase technologies and equipment reducing the environmental pressures arising from their production process (e.g. equipment reducing the air emissions). General government and NPISH accounted, with EUR 27 billion spent in 2018, for the remaining share (42 %) of environmental protection investments.

Still, between 2006 and 2018, investments of the corporations decreased by 8.4 %, whilst they remained relatively stable for general government and NPISH (see Figure 5).

The share of environmental protection investments in total investments of corporations is relatively low. In 2018, it amounted to 1.8 %, having decreased by 0.8 percentage points since 2006. The equivalent share for general government and NPISH sector was larger: it amounted to 5.9 % in 2018, having decreased by 0.9 percentage points since 2006 (see Figure 5).
Figure 5: Investment for environmental protection, EU-28, 2006–2018 (EUR million and % of total investment) Source: Eurostat (env_ac_pepssg), (env_ac_pepssp), (env_ac_pepsnsp) and (nasa_10_nf_tr)

More detailed data by EU Member State highlight that for 2016 the share investments for environmental protection in total investments by business sector varied across countries, ranging from 0.1 % to 4.7 % of total investments (see Figure 6).

Figure 6: Investment for environmental protection by corporations, 2016 (% of corporations’ total investment) Source: Eurostat (env_ac_pepssg), (env_ac_pepssp), (env_ac_pepsnsp) and (nasa_10_nf_tr)

Even larger variations were observed for the general government and NPISH sectors, the shares ranging from
0.2% to 11.2% across the EU (see Figure 7).

Figure 7: Investment for environmental protection by general government and non-profit institutions serving households (NPISH), 2016 (% of GG and NPISH total investment) (% of general government total investment)

Source: Eurostat (env_ac_pepsgg) and (nasa_10_nf_tr)

Production of environmental protection services

Data on production of environmental protection services, broken down by institutional sector and environmental protection domain (using the classification of environmental protection activities (CEPA 2000) highlight that in the EU-28 general government and NPISH produced EUR 86 billion of these services in 2016.

The largest share of the output of environmental protection services by general government and NPISH was recorded for two environmental domains: waste management and wastewater management. In EU-28 the production for both domains accounted in 2016 for 67% of total output of environmental protection services (see Table 1). In the majority of Member States similar or larger shares are observed.
Table 1: General government and non-profit institutions serving households_output of environmental protection services, 2016 (EUR million) Source: Eurostat (env_ac_pepsgg)

The EU-28 production of environmental protection services by corporations as specialist producers amounted to EUR 147 billion in 2016. Table 2 highlights data on output of environmental protection services by the specialist producers across Member States broken down into wastewater management, waste management and protection and remediation of soil, groundwater and surface water. The largest share of production was observed for waste management services, that accounted for 60 % of total environmental protection output in EU-28.

Table 2: Corporations as specialist producers_market output of environmental protection services, 2016 (EUR million) Source: Eurostat (env_ac_pepssp)
The EU-28 ancillary output of environmental protection by corporations other than specialist or secondary producers, i.e. output produced for internal use to reduce their environmental impact, amounted to EUR 27 billion in 2016 and was more equally spread over various environmental domains. The "other domains", including protection of soil, protection of biodiversity, research and development, and education accounted for the largest share of total environmental protection output (29 %); the domain of protection of ambient air and climate accounted for 26 % and waste and wastewater management domains for 22 % each one. The shares vary across the EU (see Table 3).

Table 3: Other corporations: ancillary output of environmental protection services, 2016(EUR million)

Source: Eurostat (env_ac_pepsnsp)

<table>
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<tr>
<th>Country</th>
<th>Protection of ambient air and climate</th>
<th>Wastewater management</th>
<th>Waste management</th>
<th>Other domains</th>
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Note: Data for EU28 are estimated by Eurostat.
(*) - Data for protection of soil and climate are not included.
(1) - Data for protection of soil and climate are not included.
(2) - Data for protection of soil and climate are not included.
(3) - Data for protection of soil and climate are not included.
Source: Eurostat national data on env_ac_pepsnsp

Source data for tables and graphs

- Environmental protection expenditure accounts: tables and figures

Data sources

EPEA are a module of the European environmental economic accounts set out under Regulation (EU) No 691/2011 on European environmental economic accounts. EPEA follow the international standards of the System of Environmental-Economic Accounting 2012 Central Framework (SEEA CF 2012), and are broadly compatible with the international System of National Accounts (SNA 2008) and its European version, the European System of National and Regional Accounts (ESA 2010). The EU Member States have a legal obligation to report EPEA data from 2017-onwards. Data for EFTA countries, candidate countries and potential candidates are also collected and disseminated on Eurostat database.

This article is based on the results of the 2018 data collection and gives a comprehensive picture of EPEA since all Member States with reporting obligation (Cyprus was granted a derogation) submitted data for this second mandatory collection under EU Regulation on European environmental economic account (N° 691/2011). At the present stage of development, not all national totals comprehensively cover all types of activities and all environmental domains. In particular, for specialist producers, only the environmental activities of CEPA2, CEPA3 and CEPA4 are captured by the majority of responding countries.

Statistics on EPEA provide data on a wide range of important economic variables, such as gross fixed capital formation, output, final and intermediate consumption, exports and imports, taxes less subsidies, compensation of employees, consumption of fixed capital, employment, current and capital transfers and earmarked taxes (for financing environmental protection measures). The data are broken down by environmental domain and
The EU-28 figures presented in this article are estimated, aggregating the available data from the Member States. For all EPEA reporting items used for the calculation of NEEP, data gaps were filled by Eurostat’s estimates. In addition, for the reference period not covered in the mandatory EPEA data reporting, early estimates were compiled at the EU level. Country EPEA data are compiled on the basis of the following sources: national accounts (supply and use tables), government finance statistics, structural business statistics, labour statistics and trade statistics. In many countries, results of statistical surveys, administrative sources and statistical estimations are also used for EPEA data compilation.

**Sectors** Institutional sectors are defined in SEEA CF 2012 and ESA 2010. EPEA use the following groupings of sectors: - Corporations as specialist producers of environmental protection services; - Other corporations (as ancillary producers); - General government and non-profit institutions serving households (NPISH); - Households (as consumers of environmental protection services); - Rest of the world (as beneficiary or origin of transfers for environmental protection).

The corporation sector covers all units classified in national accounts to sectors S.11 and S.12. The most important providers of environmental services are specialist producers, i.e. the units of the corporation sector whose principal activity is waste collection, treatment and disposal, sewerage, remediation activities and other waste management services, which are classified under NACE Rev. 2 Divisions 37, 39 and under NACE Rev2 Groups 38.1 and 38.2. The secondary output of environmental protection services is also captured in EPEA and included in the output of specialist producers. The corporations other than specialist producers which undertake environmental protection expenditure to ‘green’ the process of their production of non-environmental goods and services are also covered in EPEA, but under a separate sector grouping (as ‘other’/ancillary producers).

**Environmental domains** The scope of EPEA is defined according to the classification of environmental protection activities (CEPA). Data are collected and disseminated using the following breakdown:

- CEPA 1 — Protection of ambient air and climate
- CEPA 2 — Wastewater management
- CEPA 3 — Waste management
- CEPA 4 — Protection and remediation of soil, groundwater and surface water
- CEPA 5 — Noise and vibration abatement
- CEPA 6 — Protection of biodiversity and landscapes
- CEPA 7 — Protection against radiation
- CEPA 8 — Environmental research and development
- CEPA 9 — Other environmental protection activities

CEPA is a recognised international standard included in the family of international economic and social classifications. It can be downloaded from the Ramon website.

**Context**

The increased awareness of the need to combat environmental pollution and preserve natural resources has led to an increase in the supply and demand of environmental goods and services, in other words, products to prevent, measure, control, limit, minimise or correct environmental damage and resource depletion.

Statistics on environmental protection expenditure enable to identify and measure society’s response to environmental concerns and how it is financed. Environmental protection expenditure accounts (EPEA) quantify the resources devoted to environmental protection by resident economic units. They thus report the effort made by society towards implementing the ‘polluter pays principle’. Environmental protection expenditure accounts contribute directly to the EU’s policy priorities on environmental protection, resource management and green growth by providing important information on the production and the use of environmental protection services.
Other articles

- All articles on environment
- Environmental economy – statistics on employment and growth
- Environmental economy - statistics

Database

- Environmental protection expenditure (env_epe) , see:

Environmental protection expenditure accounts (env_ac_epea)
   - National expenditure for environmental protection (env_neep)
   - Production of environmental protection services (env_peps)
   - Consumption of environmental protection services (env_ceps)
   - Environmentally related transfers (env_ert)

Environmental protection expenditure and revenues (until 2013) (env_eper)

Other environmental protection expenditure statistics (env_oepes)

Dedicated section

- Environment

Publications


Methodology

- Methodological publications


- ESMS metadata files

  - Environmental protection expenditure accounts (ESMS metadata file — env_ac_epea_esms)

Legislation


External links

- European Commission — Environment — Policies
- OECD Environment Directorate