

Statistical bulletin

# Environmental protection expenditure, UK: 2020

Estimates of environmental protection expenditure by UK industries for 2015 to 2020, based on the environmental protection expenditure survey, and newly published estimates of the environmental protection expenditure accounts for 2010 to 2019.

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# 1 . Main points

- For those UK businesses where environmental protection was not their primary purpose, environmental protection expenditure (EPE) in 2020 was an estimated £2.0 billion.
- Some £1.7 billion, around 84%, was spent by businesses in the manufacturing industry.
- For total UK EPE, around £28.8 billion was spent in 2019; this is from general government, businesses (including specialist businesses), and households.
- Businesses, including specialist businesses, provide the majority of environmental protection services output, and their contribution has increased between 2010 and 2019.

## 2 . Sources for environmental protection expenditure estimates

Environmental protection expenditure (EPE) is defined in the [Eurostat EPE handbook](#) as:

the economic resources devoted to all activities and actions which have as their main purpose the prevention, reduction and elimination of pollution and of any other degradation of the environment.

This bulletin includes estimates from the EPE accounts and the EPE survey.

The Office for National Statistics (ONS) produced UK EPE accounts as part of a legal agreement with Eurostat, which published these accounts on [their database](#). Following the UK's departure from the EU, we will now publish full EPE accounts data on the ONS website. Estimates from the accounts are available from 2010 (and 2006 in some cases) to 2019.

The EPE survey is one of the data sources for the accounts. Estimates are available for 2015 to 2020.

Further information is available in the [EPE survey QMI](#) and the [EPE accounts QMI](#).

### 3 . Total environmental protection expenditure (EPE) in the EPE survey

For those UK businesses where environmental protection was not their primary purpose, environmental protection expenditure (EPE) in 2020 was an estimated £2.0 billion, compared with £2.1 billion in 2019. These businesses are those that operate in manufacturing, mining and quarrying, water collection, treatment and supply, or electricity, gas, steam and air conditioning supply.

EPE can be operating expenditure or capital expenditure. Operating expenditure relates to running costs incurred by businesses for environmental protection services that enable them to operate.

In 2020, operating expenditure accounted for £1.7 billion, or 84%, of all EPE by UK businesses. Some 75% (£1.3 billion) of this operating expenditure related to payments made to external organisations for providing them with environmental services.

Table 1: UK businesses spent £2.0 billion on environmental protection in 2020  
Environmental protection expenditure by non-specialist businesses, UK, 2018 to 2020

£ billions	2018	2019	2020
External operating expenditure	1.20	1.31	1.27
In-house operating expenditure	0.50	0.39	0.42
<b>Total operating expenditure</b>	<b>1.70</b>	<b>1.70</b>	<b>1.69</b>
End-of-pipe capital expenditure	0.33	0.38	0.31
Integrated capital expenditure	0.02	0.03	0.01
<b>Total capital expenditure</b>	<b>0.35</b>	<b>0.40</b>	<b>0.32</b>
<b>Total environmental protection expenditure</b>	<b>2.05</b>	<b>2.11</b>	<b>2.01</b>

Source: Office for National Statistics – Environmental Protection Expenditure Survey

#### Notes

1. Estimates are rounded to the nearest £0.01 billion in the table but are available to the nearest £1 million in the dataset accompanying this release.
2. Sub-totals may not sum to totals because of rounding.
3. All estimates are provided in current prices and are not adjusted for inflation.
4. Year-on-year differences should be interpreted with caution because of the precision of survey-based estimates. 95% confidence intervals (CI), a standard way of expressing the statistical accuracy of a survey-based estimate, can be found in the dataset.

## 4 . Environmental protection expenditure (EPE) by activity in the EPE survey

Business expenditure on solid waste management activities (£0.9 billion) was the largest single category (around 45%) of all environmental protection expenditure (EPE) in 2020. This comes under [Classification of Environmental Protection Activity \(CEPA\) 3](#).

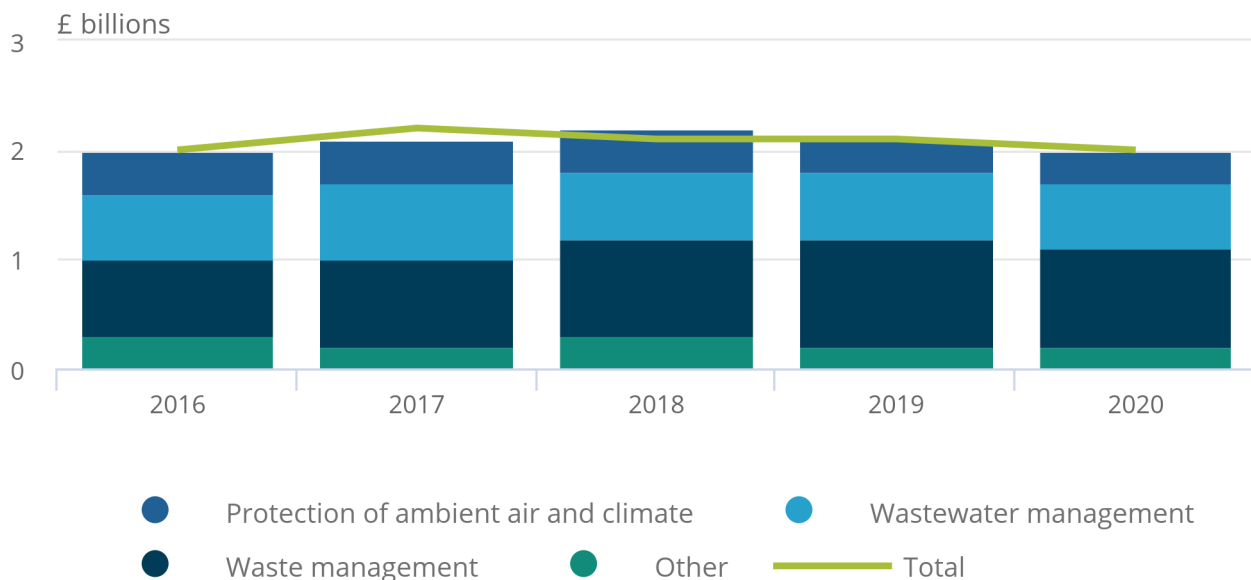
In 2020, over 90% of expenditure on CEPA 3 was external operating expenditure.

**Figure 1: Solid waste management was the largest category of environmental protection expenditure (EPE) by businesses from 2016 to 2020**

Environmental protection expenditure by Classification of Environmental Protection Activities, UK, 2016 to 2020

Figure 1: Solid waste management was the largest category of environmental protection expenditure (EPE) by businesses from 2016 to 2020

Environmental protection expenditure by Classification of Environmental Protection Activities, UK, 2016 to 2020



Source: Office for National Statistics – Environmental Protection Expenditure Survey

### Notes:

1. Estimates are rounded to the nearest £0.1 billion in the chart but are available to the nearest £1 million in the [dataset accompanying this release](#).
2. Sub-totals may not sum to totals because of rounding. This applies to all figures in the bulletin.
3. Estimates are allocated to [Classifications of Environmental Protection Activity \(CEPA\)](#).
4. The "Other" category includes expenditure on the protection of soil or groundwater, noise abatement, protection of biodiversity, protection against radiation, research and development, and other activities.



## **5 . Total environmental protection expenditure (EPE) in the EPE accounts**

The environmental protection expenditure (EPE) accounts cover three sectors - general government, businesses, and households. Estimates follow the [UN System of Environmental Economic Accounting \(SEEA\)](#) guidance. The EPE survey provides data for non-specialist businesses in the EPE accounts.

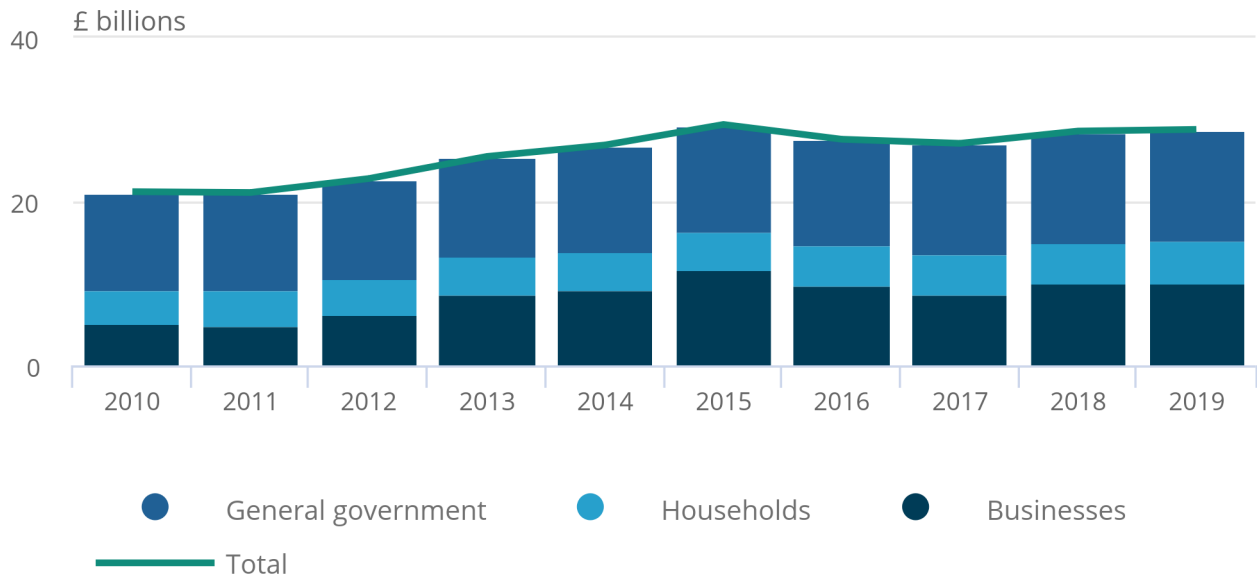
From 2010 to 2019, on average around half of total EPE was by general government. This share has decreased over the period, as businesses' contribution has increased from around 24% in 2010 to 35% in 2019.

**Figure 2: General government is the largest contributor to total environmental protection expenditure while businesses' share increased between 2010 and 2019**

Total environmental protection expenditure, including contributions from general government, businesses and households, UK, 2010 to 2019

Figure 2: General government is the largest contributor to total environmental protection expenditure while businesses' share increased between 2010 and 2019

Total environmental protection expenditure, including contributions from general government, businesses and households, UK, 2010 to 2019



Source: Office for National Statistics, environmental protection expenditure (EPE) accounts estimates

Notes:

1. Estimates for 2010 to 2013 are incomplete as some data on international transfers, which are used to calculate total EPE, are not available. These transfers make up a very small proportion of the total in other years.
2. A small proportion of EPE survey data for businesses is not available for 2014; the 2010 to 2013 average has been used.
3. Methodological differences mean that comparisons before and after 2014 and 2015 should be interpreted with caution. This applies to all charts that include data by businesses.

## 6 . Output and use of environmental protection services in the EPE accounts

The environmental protection expenditure (EPE) accounts provide estimates of total EPE by sector. Estimates of general government output, business output and household use of environmental protection services are also provided. Total EPE includes these output estimates along with capital investment and international trade and transfers. The [Quality and Methodology Information report](#) explains the structure of the accounts in more detail.

The estimates of output and use are available by [Classification of Environmental Protection Activities](#) (CEPA). In the UK, most activity is in wastewater management (CEPA 2) and waste management (CEPA 3). The latter excludes recycling activities where possible.

For output by general government, over 80% of output on average each year is in waste management. The second-largest contribution is from other environmental protection activities (CEPA 9). This category includes regulation, training and general administration and management.

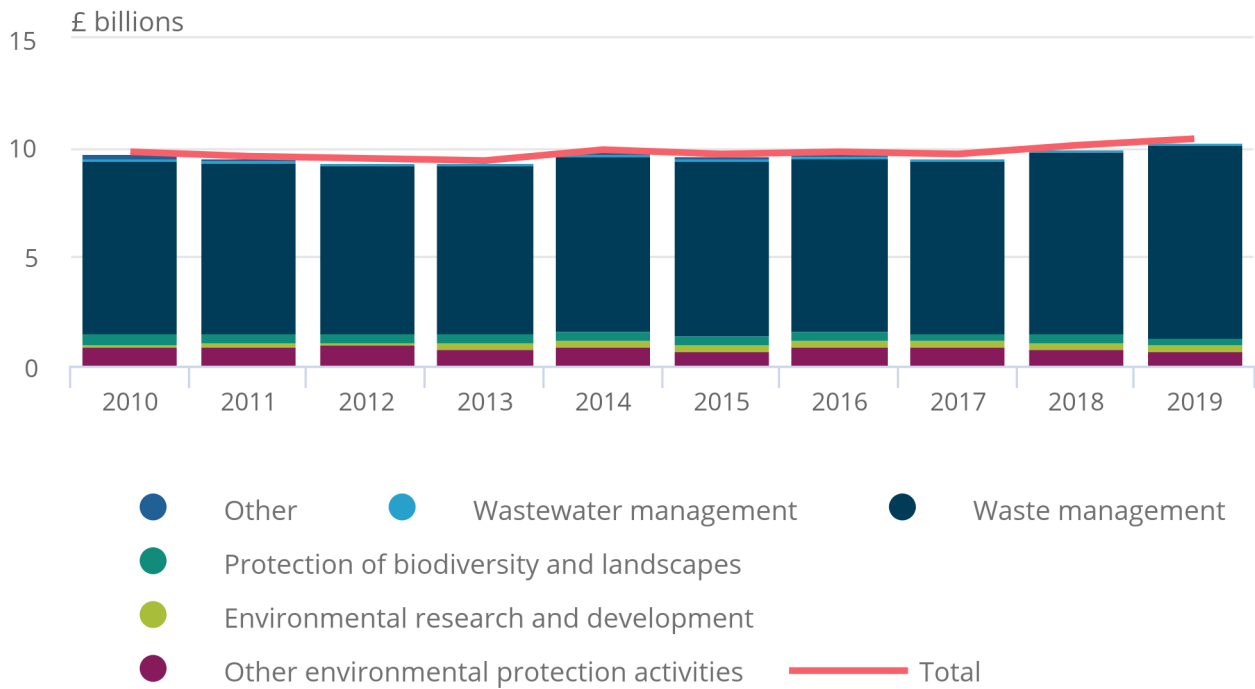


**Figure 3: The majority of output of environmental protection services from general government is related to waste management, CEPA 3**

General government output by Classification of Environmental Protection Activities, UK, 2010 to 2019

Figure 3: The majority of output of environmental protection services from general government is related to waste management, CEPA 3

General government output by Classification of Environmental Protection Activities, UK, 2010 to 2019



Source: Office for National Statistics, environmental protection expenditure (EPE) accounts estimates

Notes:

1. Data for 2006 to 2010 are also available in the [dataset accompanying this release](#).
2. The category "Other" includes protection of ambient air and climate, protection and remediation of soil, groundwater and surface water, noise and vibration abatement, protection against radiation, and research and development.
3. The category "Other environmental protection activities" includes general environmental administration, management and regulation, education, training and information, and activities not elsewhere classified.

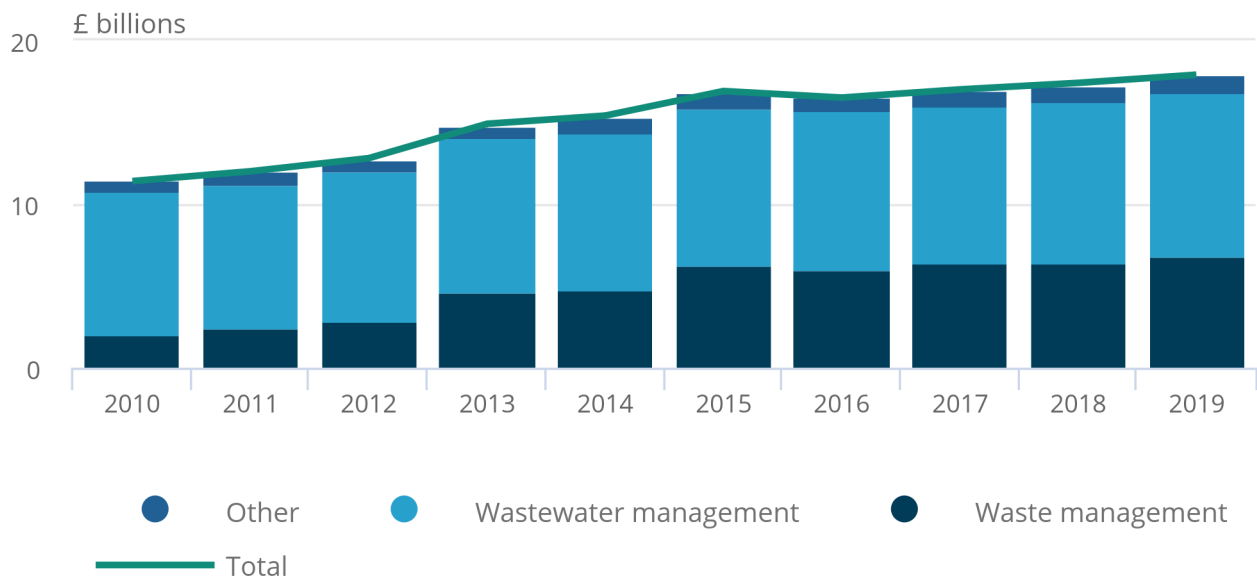
For business output, activity is concentrated in wastewater management and waste management. The contribution from waste management is increasing over time.

**Figure 4: The majority of output of environmental protection services from businesses is related to wastewater management, CEPA 2**

Specialist and other businesses output by Classification of Environmental Protection Activities, UK, 2010 to 2019

Figure 4: The majority of output of environmental protection services from businesses is related to wastewater management, CEPA 2

Specialist and other businesses output by Classification of Environmental Protection Activities, UK, 2010 to 2019



Source: Office for National Statistics, environmental protection expenditure (EPE) accounts estimates

Notes:

1. Activities by specialist businesses, which undertake environmental protection activities as their primary purpose, and other (non-specialist) businesses are included. The [dataset](#) gives separate estimates of output by these two groups. In this bulletin, as specialist businesses contribute the majority of all output and EPE, the two groups are combined.
2. This bulletin includes separate commentary on other businesses, in Sections 3 and 4.
3. The category "Other" includes expenditure on the protection of ambient air and climate, protection of soil or groundwater, noise abatement, protection of biodiversity, protection against radiation, research and development, and other activities.

Around 95% of households' use of environmental protection services is related to wastewater management, the rest being waste management.

**Figure 5: The majority of use of environmental protection services by households is related to wastewater management, CEPA 2**

Household use by Classification of Environmental Protection Activities, UK, 2010 to 2019

Figure 5: The majority of use of environmental protection services by households is related to wastewater management, CEPA 2

Household use by Classification of Environmental Protection Activities, UK, 2010 to 2019



Source: Office for National Statistics, environmental protection expenditure (EPE) accounts estimates

Notes:

1. Data for 2006 to 2010 are also available in the [dataset accompanying this release](#).

## 7 . Environmental protection expenditure data

[Environmental protection expenditure: accounts](#)

Dataset | Released 8 June 2022

Estimates for the UK's environmental protection expenditure, output and use by general government, businesses, and households, 2010 (or 2006 where available) to 2019.

[Environmental protection expenditure: industry](#)

Dataset | Released 8 June 2022

Estimates for the UK's environmental protection expenditure by industry, 2015 to 2020.

## 8 . Glossary

## Environmental protection expenditure (EPE)

The definition of EPE is based on UN guidance via the [System of Environmental Economic Accounting Central Framework](#). It is defined in [the Eurostat handbook on EPE](#) as: "the economic resources devoted to all activities and actions which have as their main purpose the prevention, reduction and elimination of pollution and of any other degradation of the environment."

### Output

Output is the total value of the goods and services produced in the given time period, such as in one year.

### Intermediate consumption

Intermediate consumption is the value of the goods and services consumed as inputs by a process of production. They may be transformed or fully used up during this process.

### Gross fixed capital formation

Gross fixed capital formation (GFCF) is the acquisition less disposals of produced fixed assets; that is, assets intended for use in the production of other goods and services for a period of more than a year. Acquisition includes both purchases of assets (new or second-hand) and the construction of assets by producers for their own use.

### Household use

Also known as household final consumption expenditure, household use is the value of a given good or service a household uses in a given time period. It is not a full measure of consumption as many services may be provided by the government as social transfers.

### Transfers

Transfers are payments from one sector to another, often with one sector being general government. They can be current or capital transfers. In the EPE account, they capture EPE that may not be captured in the other tables in the account, such as payments from the government to the rest of the world.

## 9 . Measuring the data

The estimates in this bulletin are from a wide range of sources. One source is the [Environmental Protection Expenditure \(EPE\) survey](#), which is used to estimate EPE by businesses where environmental protection is not their primary purpose. The survey samples around 3,000 businesses that operate in four industries, based on [Standard Industrial Classification \(SIC\)](#):

- SIC Section B - Mining and quarrying
- SIC Section C - Manufacturing
- SIC Section D - Electricity, gas, steam and air conditioning supply
- SIC Section E, Division 36 - Water collection, treatment and supply

In 2020, the response rate to the survey was around 60%. Potential activity in other industries is not captured by the survey. As with any survey-based estimates, these are subject to a margin of error and should be interpreted with caution. Standard errors around all published estimates are published in the [dataset accompanying this release](#).

Estimates from this survey are presented in Sections 3 and 4 in this bulletin. [A separate dataset](#) is also available. Further information is available in the [EPE survey Quality and Methodology Information report](#). Data from the survey are available from 2015 to 2020.

For the EPE accounts, other data sources include the Annual Business Survey, European System of Accounts data on government expenditure, the Blue Book, and Supply and Use Tables. Data on output, intermediate consumption and gross fixed capital formation are used.

The sources used for each table in the dataset and the methodology are available in the [EPE accounts Quality and Methodology Information report](#). The EPE accounts are available from 2010 to 2019 (and from 2006 in some cases).

New accounts and survey estimates may include revisions to previous years. We incorporate new data and methodology where appropriate. Examples include revisions to previous submissions from businesses for the survey, and re-balancing exercises in Supply and Use Tables for the accounts.

## 10 . Strengths and limitations

The environmental protection expenditure (EPE) survey is more timely than the accounts and offers data on internal and external operating expenditure, and capital investment, on EPE by specific UK businesses.

The survey has a sample size of around 3,000, which makes detailed disaggregations difficult. As with other surveys, the estimates are subject to some [uncertainty](#). Estimates of the level of uncertainty (standard errors and confidence intervals) reported are presented [in the dataset](#).

Changes in the estimates reported in this statistical bulletin between 2018 and 2020 are not usually greater than the level that is explainable by sampling variability. This means movements in the estimates should be treated as indicative only.

The EPE accounts use National Accounts data, increasing the quality of the estimates and integrating them with other economic data. They are based on the UN's [System of Environmental Economic Accounting](#), enabling comparability between countries.

There is a time lag of 2 or 3 years between the latest reference year in the estimates and publication because of availability of underlying data.

## 11 . Related links

### [Low carbon and renewable energy economy, UK: 2020](#)

Bulletin | 17 February 2022

Estimates of the size of the UK's green economy from the Low Carbon and Renewable Energy Economy Survey, including turnover and employment.

### [UK environmental goods and services sector \(EGSS\): 2019](#)

Bulletin | 22 March 2022

First estimates of the UK environmental goods and services sector (EGSS) for 2019 and revised estimates for 2010 to 2018. Included are estimates of output, gross value added, employment and exports.

### [UK Environmental Accounts: 2022](#)

Bulletin | 9 June 2022

Measuring the contribution of the environment to the economy, the impact of economic activity on the environment, and society's response to environmental issues.