Environmental accounts on the environmental goods and services sector (EGSS) QMI

Quality and Methodology Information for environmental goods and services sector statistics, detailing the strengths and limitations of the data, methods used and data uses and users.

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1 . Output information

- National Statistic: Experimental
- Frequency: Annual
- How compiled: Various sources
- Geographic coverage: UK
- Last revised: 3 July 2023

2 . About this Quality and Methodology report

This quality and methodology report contains information on the quality characteristics of the data (including the Code of Practice for Statistics from the UK Statistics Authority) as well as the methods used to create it.

The information in this report will help you to:

- understand the strengths and limitations of the data
- learn about existing uses and users of the data
- understand the methods used to create the data
- decide suitable uses for the data
- reduce the risk of misusing data

3 . Important points

This report provides users of the environmental goods and services sector (EGSS) statistics with information on the quality and appropriate use of these estimates.

The EGSS statistics form part of the Office for National Statistics (ONS) UK Environmental Accounts.

This is part of a set of reports covering UK Environmental Accounts estimates. There are quality and methodology information reports available for other UK Environmental Accounts estimates, including:

- Air emissions
- Energy use
- Material flows
- Environmental Protection Expenditure
- Environmental taxes

4 . Quality summary

Overview

The UN System of Environmental-Economic Accounting (SEEA), together with the UN System of National Accounts (SNA) and the European System of Accounts (ESA), provides a framework for producing internationally comparable statistics on the environment and its relationship with the economy.

Following this international framework and after considering expert advice, the UK has identified that there are 17 different areas of activity[1] that make up the overall environmental goods and services sector (EGSS) of the UK economy.

A range of statistics is published in the UK Environmental Accounts on the EGSS:

- output broken down by activity, Classification of environmental protection activities and classification of resource management activities (CEPA and CReMA) and Standard Industrial Classification 2007
- gross value added broken down by activity, CEPA/CReMA and SIC 2007
- employment broken down by activity, CEPA/CReMA and SIC 2007
- exports broken down by activity, CEPA/CReMA and SIC 2007

The CEPA and CReMA classifications were devised by Eurostat, and enable comparisons across European countries. The SIC 2007 is the UK's classification system for businesses and enables comparisons with other UK data.

These are all made available for download as Microsoft Excel files from the Environmental Accounts page of the ONS website.

A wide variety of data sources is used to compile EGSS estimates. An important source for estimating EGSS output, gross value added and exports is Supply and Use tables from the National Accounts. Estimates of employment are largely taken from the Business Register and Employment Survey.

A range of other complementary data sources are used such as the Annual Business Survey, Inter-Departmental Business Register and Environmental Protection Expenditure Survey. It is more difficult to produce estimates for some activities compared to others. This is the case for environmental charities, so estimates for this activity should be treated with caution. For the six activities that use LCREE survey data[2], granular data is used and so the uncertainty associated with these estimates also means that they should be used with caution.

Users and uses

(Who is using the data and for what purposes.)

Owing to its compatibility with the boundaries and definitions used within the UN System of National Accounts (SNA), the EGSS data provide a useful input to economic analysis.

The potential uses for data come from a variety of international organisations, UK and other governments and the research community.

Notes for: Quality summary

1. Energy saving and sustainable energy systems; environmental charities; environmental consultancy and engineering services; environmental construction; environmental education; environmental low emissions vehicles, carbon capture and inspection and control; in-house environmental activities; insulation activities; management of forest ecosystems; managerial activities of government bodies; organic agriculture; production of industrial environmental equipment; production of renewable energy; recycling; waste; wastewater; and water quantity management. Although previously included as EGSS activities, activity related to second-hand shops and the wholesale of scrap are no longer deemed to be part of the EGSS per SEEA guidance.

2. Energy saving and sustainable energy systems, environmental consultancy and engineering services, environmental-related construction activities, environmental inspection, and control and production of industrial environmental equipment, and production of renewable energy.

5 . Quality characteristics of the EGSS data

Geography

Estimates are available at UK level. “UK level”, in this context, is on a “residency” basis – that is, including activity of UK-registered businesses that may take place outside of the UK, and excluding activity in the UK of businesses that are registered abroad.

Coherence and comparability

Within the UK, the Low Carbon and Renewable Energy Economy (LCREE) Survey, provides information on turnover, employment, imports, exports, capital acquisitions and disposals within a similar area of the UK economy.

General trends demonstrating growth in this area (interpretations of the “green economy”) can be observed from both LCREE and environmental goods and services sector (EGSS) estimates. We use LCREE estimates for some of the activities in EGSS, as they are the best available source. These activities are energy saving and sustainable energy systems; environmental consultancy and engineering services; environmental construction; environmental low emissions vehicles, carbon capture and inspection and control; production of renewable energy; and production of industrial environmental equipment. This is as a result of recommendations made following investigatory work to improve the quality of EGSS estimates, which was undertaken by the Office for National Statistics (ONS) funded by a Eurostat grant in 2018.

Compilation methods of the EGSS accounts vary internationally depending on what specific activities are deemed to be economically significant within the agreed framework, and depending on the available data sources. This potentially reduces the comparability between countries.

A time series of EGSS estimates is currently available back to 2010, therefore trends can be observed over time. The ONS continuously looks to make methodological improvements based on, for example, international best practice, changes to reporting requirements, or data revisions from suppliers. This means that while the whole time series is always subject to revision, the data are comparable over time.

Timeliness and punctuality

EGSS data are published within the UK Environmental Accounts (EA) release in June each year, currently on a year-3 basis.

The release, and any articles associated with the EGSS estimates, are pre-announced on the ONS website. Previously released datasets are accessible on the ONS website.

Concepts and definitions

The UN System of Environmental-Economic Accounting (SEEA), together with the UN System of National Accounts (SNA) and the European System of Accounts (ESA), provides a framework for producing internationally comparable statistics on the environment and its relationship with the economy.

Although there is no commonly accepted definition of the ‘green economy’, the EGSS framework, adopted under the SEEA, provides a set definition and specification of activities that could make up the green economy. The EGSS includes areas of the economy engaged in producing goods and services for environmental protection purposes, as well as those engaged in conserving and maintaining natural resources.

Excluded from the scope of EGSS are goods and services produced for purposes that, while beneficial to the environment, primarily satisfy technical, human and economic needs or that are requirements for health and safety. Goods and services related to minimising the impact of natural hazards and those related to the extraction, mobilisation and exploitation of natural resources are also excluded.

The estimates of output, gross value added, employment in full-time equivalents and exports are presented in the EGSS estimates disaggregated by industry (Standard Industrial Classification 2007) and by Classification of environmental protection activities and classification of resource management activities (CEPA and CReMA) categories.

6 . Methods used to produce the EGSS data

A general methodology for producing environmental goods and services sector (EGSS) accounts has been developed by Eurostat, as outlined in the Eurostat EGSS Handbook (2016) and the Eurostat EGSS Practical Guide 2016 edition (PDF, 2.58MB).

However, the handbook and practical guide acknowledge that each member state will need to adapt the methodology to meet its country’s needs, in line with data sources available. Owing to the large array of data sources used to compile data for 17 different EGSS activities, the information in this section provides a high-level summary of the main sources of data and demonstrates the basis on which the EGSS accounts are produced.

A summary of all data sources and methods used for each EGSS activity is available in the EGSS Methodology Annex. To aid with understanding of methods used to produce the data, this section has been split by economic variable (output, gross value added, employment or exports).

Output and gross value added

The main sources of data used for estimating EGSS output and gross value added (GVA) are Supply and Use tables from the National Accounts. Data from the Annual Business Survey is also used widely because it provides more disaggregated data. For output, data from the Low Carbon and Renewable Energy Economy (LCREE) survey is also used widely.

Supply and Use tables allow for estimates of output, GVA and exports by Standard Industrial Classification (SIC) and show the supply of goods and services that are either produced in the domestic industry or imported, and where and how goods and services are used in the economy.

The ABS is an annual survey covering the production, construction, distribution and services industries and provides data on output and GVA for approximately two-thirds of the UK economy.

The LCREE survey asks businesses if they undertake any activity in seventeen areas that are defined in the survey guidance, and which are either ‘low carbon’ or related to the production of renewable energy.

For some parts of the EGSS, Supply and Use table estimates of output and GVA by SIC map directly onto an EGSS activity.

For example, for the EGSS activity of water quantity management, we use relevant data from Supply and Use tables for SIC 2007 Division 36.

However, in other cases an EGSS activity may make up only a proportion of output or GVA from an industry. Available data from the ABS (or other data sources as required), which provide a more detailed level of SIC breakdown than available Supply and Use tables, can be used to apportion Supply and Use table estimates into their specific EGSS activity component.

For example, when trying to estimate output and GVA for the EGSS activity of waste, Supply and Use tables can provide data for SIC 2007 Division 38 (waste collection, treatment and disposal activities). However, SIC 38.3, material recovery, is not in scope of waste as set out by the EGSS framework, and so data for this specific SIC code needs to be excluded. Such a breakdown is not available with Supply and Use tables, and so the relationship of output and GVA for SIC Group 38.3 (which is contained within SIC Division 38) to SIC Division 38 is taken from available ABS data and applied to the Supply and Use table data.

Data from the LCREE survey is used for output estimates for five EGSS activities. The LCREE survey does not provide information on GVA, so Supply and Use data for the relevant SICs of the activity is used to show the relationship between output and GVA, which is then applied to the LCREE output estimates.

Employment (full-time equivalents)

A main source for employment estimates for EGSS is the UK Business Register and Employment Survey (BRES). This survey collects comprehensive employment information from UK businesses. The LCREE survey is also another important source for employment.

Exports

For compiling data for EGSS exports, exports of both goods and services are required.

The main sources of data for estimating exports are the International Trade in Services (ITIS) data, HM Revenue and Customs (HMRC) international trade in goods data, and Supply and Use tables from the National Accounts.

Together, the ITIS and HMRC data can help provide a complete picture of the UK exports of goods and services. As with output and GVA, Supply and Use tables can be used to provide estimates of exports, with extra data sources used to inform breakdowns when needed. Note that for some activities exports are assumed to be zero.

Accuracy

Defining the scope of the EGSS in a sufficiently accurate way for statistical measurement is not straightforward. The issue is where to draw the borderline of the sector and how to do it in a way that is conceptually relevant, statistically sound and aligned in practice to the definitions and classifications used in the data sources available for the compilation of the accounts. Because of the variety of data sources used in the production of the EGSS accounts, it is not possible to produce statistical measures of accuracy, such as variances and confidence intervals.

Currently, the accounts aim to capture the most prominent areas of EGSS, but it is unlikely that all relevant EGSS activity is being captured. Over time we hope to identify more industries that also have relevant activity and include these in the accounts. In addition, the majority of data sources used to calculate estimates were not specifically intended to capture EGSS and therefore have been adapted from the initial purpose in which the data were collected.

Some of the EGSS activities are likely scattered over many different SIC categories. Therefore, whilst a range of data sources has been used to compile the estimates, these have varying degrees of reliability and quality. The quality of the statistics for activities which sit in one SIC code, such as wastewater, is higher when compared to those that sit across multiple SIC codes, such as environmental charities, because Supply and Use data can be used for them.

There are some known discontinuities in some of the data sources used to compile EGSS estimates. For example, the EGSS activity in-house environmental activities uses the Environmental Protection Expenditure Survey. Because of the change of commissioning of this survey from the Department for Environment, Food and Rural Affairs (Defra) to the Office for National Statistics (ONS), no data were collected in 2014. The migration to the ONS also resulted in a break in the time series for this activity.

Whilst compiling the EGSS estimates, quality assurance processes are completed to ensure accurate and consistent compilation of the EGSS accounts. Quality assurance processes include built-in automated checks. For example, automated checks examine: subtotal to total consistency, year-on-year differences in estimates and the ratio of EGSS economic variables to each other (such as the ratio between output and gross value added).

7 . Other information

UK Environmental Accounts

UN System of Environmental-Economic Accounting (SEEA)

UK environmental goods and services sector (EGSS) estimates

EGSS handbook 2016 (PDF, 2.91MB)

EGSS practical guide 2016 (PDF, 2.58MB)

Eurostat EGSS Accounts

8 . Cite this QMI

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