

Environmental economy business surveys development plan, UK

Overview of our plans for the development of statistics collected by our environmental economy business surveys, including a timeline for this development.

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Table of contents

1. [Overview](#)
2. [Reasons for development](#)
3. [Software transformation](#)
4. [Survey transformation](#)
5. [Further developments](#)
6. [Timelines](#)
7. [Engagement](#)
8. [Definitions and Terms](#)
9. [Data related to LCREE and EPE surveys](#)
10. [Related links](#)
11. [Cite this page](#)

1 . Overview

- Our Low Carbon and Renewable Energy Economy (LCREE) and Environmental Protection Expenditure (EPE) Surveys both provide important official statistics on the environmental economy.
- Both surveys require a move away from legacy software; once this is completed, they would benefit from questionnaire development.
- These surveys are currently processed end-to-end in SAS; we are rebuilding these in Python.
- Alongside delivering the surveys in Python, we will investigate potential changes to both questionnaires and their structure.
- Our objective is to have a survey capability that meets our users' needs by effectively measuring the environmental economy, both now and into the future.
- Continued development of regular LCREE Survey outputs is ongoing, including research and development (R&D) estimates and indirect estimates, both of which are official statistics in development.

2 . Reasons for development

The Office for National Statistics (ONS) has collected Low Carbon and Renewable Energy Economy (LCREE) Survey data since the 2014 reporting year, and Environmental Protection Expenditure (EPE) Survey data since the 2015 reporting year.

During this period, minor adjustments have been made to questionnaires, processing methods and presentation of the data in statistical releases. However, to maintain coherence between annual results, the overall format and content of both surveys has remained largely unchanged.

Since we first collected environmental economy business survey data, there have been significant changes and developments in:

- the nature of the UK's environmental economy, including the growth of renewable energy as an alternative to fossil fuels and emerging technologies such as carbon capture
- changing energy efficiency standards, for example, in the construction industry
- changes to environmental policy and regulation, as well as national and international frameworks for economic and environmental statistics
- advancements in the technology that enables the implementation of statistical methods to process survey data

These factors, along with strong continued stakeholder interest in our statistics, are the main considerations of our work in transforming these surveys so that they continue to serve our users' needs.

Our work is defined within two strands:

- legacy software exits, moving our survey processing systems from SAS to Python, initially replicating existing questionnaire formats
- longer-term review and potential changes to survey structures, content and questionnaire formats

Initially replicating existing LCREE and EPE questions in Python would allow for full quality assurance of the new system to take place before any changes to questionnaires are made.

An important aim of redesigned questionnaires would be to ensure that they serve user needs and can address future changes in the environmental economy, so that any impacts on year-to-year comparability of the data are minimised.

3 . Software transformation

Low Carbon and Renewable Energy Economy (LCREE) and Environmental Protection Expenditure (EPE) Survey data are processed on SAS systems. Since these surveys first collected data, developments in programming technology enable the building of a system that is more automated, modular and flexible for future system and content changes.

Our existing SAS system is highly manual, requiring human involvement throughout the process. This impacts timeliness during processing and requires extensive quality assurance work to ensure confidence in the results produced.

Increasing system modularity will aim to provide increased quality through improved timeliness and by increasing confidence in results, with less of a quality assurance burden.

We will build the new system in Python using the LCREE and EPE questionnaires in their current form, but using a design that will better allow future system changes or updates to questionnaire content.

Python will provide significant benefits. It is open-source software that is widely used across both academia and industry. The accessibility of Python from both a software and skills recruitment perspective will make maintenance and future development of the new system much easier.

The required survey processing system consists of three stages:

- data take-on: reading the questionnaire responses into Python and performing data preparation for downstream processes
- data validation: running predetermined tests on data to identify returns that need querying
- estimation and results generation: applying statistical techniques such as weighting, imputation and winsorisation before aggregating results (see [Definitions and Terms section](#) for description of these techniques)

Appropriate planning, data flow and process mapping will take place to ensure these three stages are coherent and interact efficiently. We will use a Git repository (see [Definitions and Terms](#)) for version control, unit testing to provide assurance, and virtual environments to ensure consistent Python packages between all developers and users of the system.

4 . Survey transformation

As previously mentioned, we have only made minor changes to the questions on our environmental economy business surveys since data were first collected in 2014 and 2015. We are now beginning a project reviewing the possibility of implementing more major changes to keep up with modern economic frameworks, and a changing environmental economy.

The main priorities for Low Carbon and Renewable Energy Economy (LCREE) Survey transformation include:

- review of the LCREE sectors, to remain up to date with a changing environmental economy
- review of the LCREE target population, sampling methods and sample sizes
- additional questions on job quality, demographics of LCREE jobs and subnational jobs

The main priorities for Environmental Protection Expenditure (EPE) Survey transformation would be:

- collecting data on the circular economy
- collecting data on private investment in nature as well as habitat protection and restoration
- additional questions about climate change adaptation
- keeping up to date with the latest environmental protection classification standards

We will be considering a range of options for our environmental economy business surveys, from minor updates to the existing surveys through to combining LCREE and EPE into a single environmental economy business survey. This would depend on a thorough review of all potential activities we intend to capture with our suite of environmental economy businesses surveys, using our domain expertise and stakeholder feedback to inform decisions.

5 . Further developments

LCREE indirect estimates

We currently produce [indirect estimates](#) of Low Carbon and Renewable Energy Economy (LCREE) activity, capturing the wider supply chain impacts associated with LCREE, as [official statistics in development](#). These complement our survey-based estimates by providing an indication of the additional activity generated across the economy through intermediate demand. We produce these estimates by applying UK input-output analytical tables to our LCREE Survey data.

These estimates are classed as official statistics in development to reflect ongoing methodological development and quality improvement work.

We will continue to develop and refine these estimates, including:

- improving the treatment of intermediate demand within LCREE activity
- addressing known limitations such as potential double counting when combining direct and indirect estimates
- reviewing assumptions used within the input-output framework

LCREE research and development

We have published estimates of [research and development](#) (R&D) activity within the LCREE, providing new insights into expenditure on innovation activity across LCREE sectors.

These estimates present data collected through the LCREE Survey and are produced in line with the survey's existing methods including sampling, weighting, imputation and revisions.

These estimates are published as [official statistics in development](#), reflecting ongoing work to improve data quality, validation processes and methodological consistency.

We will continue to refine these estimates, including:

- improving validation and quality assurance processes
- strengthening consistency in the reporting of in-house and purchased R&D
- improving coherence and interpretation of estimates across sectors and over time

6 . Timelines

Software legacy exit and survey transformation

Target timelines for transformation work are:

- by end of March 2027: Python system ready for processing the 2026 LCREE data with existing questionnaire format
- by end of September 2027 [note 1]: Python system ready for processing the 2026 EPE data with existing questionnaire format
- during 2028: potential rollout of transformed environmental business survey questions

Other developments

Development of additional outputs, including LCREE indirect estimates and research and development (R&D) estimates, will continue as part of ongoing survey production, with iterative improvements aligned to annual survey processing and publication cycles.

Notes from Timelines

1. The [Survey transformation section](#) refers to an option combining LCREE and EPE. If this option is taken, we may bypass the conversion of the current version of EPE into Python. We will provide updates on this option as and when a decision is made.

7 . Engagement

As part of this development work, we intend to continue engaging with our main users, including:

- Department for Energy Security and Net Zero (DESNZ)
- Department for Environment, Food and Rural Affairs (Defra)
- Scottish Government
- Welsh Government
- Northern Ireland Department for Economy

We are also eager to engage with a wider group of our users in relation to this work. If you would like to discuss, or have any suggestions, please email: environment.accounts@ons.gov.uk.

8 . Definitions and Terms

EPE

Environmental Protection Expenditure (Survey).

LCREE

Low Carbon and Renewable Energy Economy (Survey).

R&D

Research and development.

Git

An open-source version control system.

Imputation

A technique used to estimate the value of missing data caused by non-response.

Stratification

A method for arranging the survey sample into distinct classes known as cells or strata.

Weighting

In stratified samples like LCREE and EPE, this is a method used to represent non-sampled businesses within the same stratum.

Winsorisation

A technique for identifying and handling outliers.

9 . Data related to LCREE and EPE surveys

[Low carbon and renewable energy economy estimates](#)

Dataset | Released 25 February 2026

Annual estimates of low carbon and renewable energy economy activity in the UK and constituent countries: turnover, employment, exports, imports, acquisitions, disposals and number of businesses.

[Low carbon and renewable energy economy indirect estimates](#)

Dataset | Released 25 February 2026

Annual estimates of Low Carbon and Renewable Energy Economy (LCREE) direct, indirect, and total turnover and employment in the UK, by sector and group. These are official statistics in development.

[Environmental Protection Expenditure Survey estimates: by industry and activity](#)

Dataset | Released 6 May 2026

Estimates of environmental protection expenditure by UK industries, based on the Environmental Protection Expenditure Survey.

[Low carbon and renewable energy economy survey, research and development estimates](#)

Dataset | Released 26 August 2026

Annual estimates of low carbon and renewable energy economy, research and development expenditure in the UK and constituent countries from 2020 to 2024, covering both in-house and purchased expenditure. These are official statistics in development.

10 . Related links

[Low carbon and renewable energy economy, UK: 2024](#)

Bulletin | Released 25 February 2026

Estimates of the size of the UK's low carbon and renewable energy economy, including turnover and employment.

[Low Carbon and Renewable Energy Economy Survey indirect estimates, UK: 2015 to 2024](#)

Bulletin | Released 25 February 2026

Indirect and total estimates of turnover and employment in the low carbon and renewable energy economy. These are official statistics in development.

[Environmental Protection Expenditure Survey, UK: 2022](#)

Bulletin | Released 23 August 2024

Estimates of environmental protection expenditure by UK industry and activity, based on the Environmental Protection Expenditure (EPE) Survey.

[Low Carbon and Renewable Energy Economy Survey, research and development estimates, UK: 2020 to 2024](#)

Bulletin | Released 26 August 2026

Research and development estimates of the UK's low carbon and renewable energy economy. These are official statistics in development.

11 . Cite this page

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