

# Climate changing carbon dioxide emissions from SEPA regulated industrial sites drop 57% in a decade

This is a Policy statement and relates to the 2019 Pollutant emissions and waste transfers from SEPA regulated industrial sites experimental Official Statistics published at 9.30 am and available on SEPA's website at [www.sepa.org.uk/environment/environmental-data/spri/](http://www.sepa.org.uk/environment/environmental-data/spri/). Climate changing carbon dioxide emissions from SEPA regulated industrial sites drop 57% in a decade – down 5% in the last year. 2019 Scottish Pollutant Release Inventory (SPRI) contains data from 1,327 regulated sites published by Scottish Environment Protection Agency (SEPA). The Scottish Pollutant Release Inventory (SPRI) 2019 data – this year experimental official statistics – was published today [29 September 2020] by the Scottish Environment Protection Agency. This year's data covers annual mass releases of specified pollutants to air and water and information on off-site waste transfers from 1,327 SEPA regulated industrial sites.

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## **Greenhouse gases**

The two largest contributing pollutants in terms of emissions are carbon dioxide and methane which drive the overall greenhouse gas trend. While carbon dioxide continues to drive the overall emissions trend and remains the largest contributing pollutant in terms of the emissions for 2019, the data shows Scotland's carbon dioxide emissions have reduced significantly in the last 10 years. Emissions of the gas are down 57 per cent in the decade and 5 per cent annually to around 11,293,146,000 kg since 2018.

Whilst overall carbon dioxide emissions fell by 5% in the last year, direct emissions from those waste and waste-water management sector facilities

required to report under SPRI increased by 76% over the last decade, partly driven by a move towards waste incineration instead of landfill for residual waste management. However, their emissions of greenhouses gases remain small relative to the energy sector.

The shift away from landfill towards recycling and incineration has resulted in further reductions in direct Methane emissions. While methane does not remain in the atmosphere as long as carbon dioxide it is initially far more impactful on the climate because of how effectively it absorbs heat. Methane emissions decreased significantly – by 44% – over the decade to 2019, and by 4% between 2018 and 2019 to 26,777,357 kg.

	2010	2018	2019	% change 2010-2019	% change 2018-2019
Carbon dioxide	26,384,456,678	11,849,079,760	11,293,145,941	Down 57%	Down 5%
Methane	47,912,442	27,878,368	26,777,357	Down 44%	Down 4%
Nitrous Oxide	250,912	89,846	96,543	Down 61%	Up 8%
Hydrofluorocarbons	1,465	3,513	1,263	Down 14%	Down 64%
Perfluorocarbons	1,604	4,418	3,945	Up 146%	Up 11%
Sulphur Hexafluoride	207	107	221	Up 7%	Up 106%

All measurements in kilogrammes.

### Energy transition

A number of variables influence SPRI emissions. In the long term, the shift away from use of coal as a fuel is a significant factor. Carbon dioxide emissions from the energy sector have fallen by around 70% since 2010, largely due to the closure of coal fired power stations. As emissions from the energy sector have fallen, releases from other sectors now form a greater proportion of the greenhouse gas emissions reported to SPRI.

Some of the decreases observed for these gases can be accounted for by investment in new technologies and renewables, and landfill gas recovery systems.

Wider economic drivers and the weather are other factors identified as affecting carbon dioxide and other greenhouse gas emissions from SPRI sites.

### Circular economy

Scotland's progress towards a circular economy is also highlighted in both SPRI and separate '2019 Waste landfilled in Scotland' and '2019 Waste incinerated in Scotland' Official Statistics released today by SEPA.

As Scotland reduces, reuses and recycles more than ever before, waste which cannot be recycled is now being diverted from landfill as new energy from waste (incineration) infrastructure comes online. As a consequence methane emissions from the waste sector decreased by 47% over the decade, from a high ceiling of 40,868,900 kg in 2010, to 21,575,000 kg in 2019. Capture of gas at landfill sites has also contributed to the reduction.

Consequently, as methane emissions from landfill have reduced, carbon dioxide from incineration sites have increased 83% over the last decade from a low base of 1,090,000,000 kg to 2,000,000,000 kg in 2019. Emissions from this sector are small compared to that of the energy sector.

These trends represent direct emissions of greenhouse gases from specific parts of the waste management sector. They do not take into account efforts to reduce, reuse and recycle our waste. Scotland's Carbon Metric shows that in 2018, the overall impact of Scotland's waste management system – taking into account reduction, recycling, incineration and landfill – was 30% less than in 2011.

Terry A'Hearn, Chief Executive of SEPA, said:

“These experimental official statistics chart the progress we've made as a nation with our globally ambitious climate change targets, with some pollutants emitted from regulated businesses falling in the last decade. They also reflect the realism of a modern, Western European economy in transition.

“The successful businesses of tomorrow will be those that are sustainable. As Scotland's environmental regulator, our firm focus remains to helping Scottish businesses innovate and emerge stronger and more sustainably from the current public health pandemic, enabling leadership in a decade of climate emergency.”

Minor year-to-year fluctuations in pollutants can often be attributed to changes at a few sites, due to increases or decreases in production, changing source products and new sites opening. All pollutants have a reporting threshold, below which sites do not need to report a value to SPRI. An increase in production can move a site's releases above the threshold, giving the appearance of a larger increase.

**ENDS**

**NOTES TO EDITORS:**

Complete SPRI data is available in two places:

- On SEPA's website at <https://www2.sepa.org.uk/spria/Search/Options.aspx>  
This tool allows you to search for individual site data in various ways. The full public content of each site's return can be downloaded as a pdf. Some summary data can be downloaded as csv files. All data provided here is as live on the SPRI database, and it will update through the year where data corrections are made.
- On Scotland's Environment Web at [environment.gov.scot/data/data-analysis/scottish-pollution-release-inventory/](https://environment.gov.scot/data/data-analysis/scottish-pollution-release-inventory/)  
This is a data analysis tool which allows you to view summarised information by industry sector for pollutants and waste transfers. Data can be downloaded in bulk, including at a site level. It is updated annually when the previous year's data is published. For the first time,

2019 data is being published as an experimental official statistic

Waste landfilled in Scotland – 2019 and Waste incinerated in Scotland – 2019 Official Statistics are available on SEPA's website at [www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/waste-data-for-scotland](http://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/waste-data-for-scotland)

### **Scottish Pollutant Release Inventory (SPRI)**

- Operators of sites carrying out specific activities (67 activities covering 10 major sectors) above defined capacity thresholds are obliged to report to SPRI on an annual basis. The activities and thresholds are largely determined by European reporting requirements but some thresholds have been lowered to be relevant to pollutant releases in the UK and Scotland.
- Since 2001, owners or operators of facilities that have met the SPRI reporting requirements have reported on an annual basis. Data from SPRI is used to fulfil the reporting requirements of the European Pollutant Release and Transfer Register (E-PRTR).
- Using the tool to compare facilities or sectors provides a general overview of the total amounts of pollutants released or waste transferred. However, direct and causal inferences should not be made because detailed knowledge of processes, installed abatement technologies and other installed emission reduction technologies and practices must be known before this type of analyses can be accurately and definitively performed. Further, the types and amounts of source material, management methods, production patterns, etc. must also be known.

SPRI is a searchable database of annual mass releases of specified pollutants to air and water from SEPA regulated industrial sites. It also provides information about off-site transfers of waste from these sites. It does not assess the compliance of the facilities or the health and environmental impact of the releases. Site compliance can be found in [SEPA's Compliance Assessment Scheme results](#).