

Greenhouse gas emissions from Scottish businesses fell by over 50% since 2008

20 March 2020

Scottish Pollutant Release Inventory (SPRI) data for 2018 published by SEPA. SPRI is a database of annual mass releases of specified pollutants to air, water and land from SEPA regulated industrial sites.

- Scottish Pollutant Release Inventory (SPRI) data for 2018 published by SEPA. SPRI is a database of annual mass releases of specified pollutants to air, water and land from SEPA regulated industrial sites.
- Emissions of pollutants from SEPA regulated businesses fell between 2008 and 2018.
- Sustained downward trend in greenhouse gas releases over the past ten years.
- Both carbon dioxide and methane, the main greenhouse gases, saw reductions of over 50% over those ten years.
- A 3% increase in greenhouse gases between 2017 and 2018 reflecting the realism of a transition economy and demand from the grid from the 2018 'Beast from the East' severe weather event.

The Scottish Environment Protection Agency (SEPA) today (20 March 2020) published its [Scottish Pollutant Release Inventory](#) (SPRI) data for 2018. SPRI is a database of annual mass releases of specified pollutants to air, water and land from SEPA regulated industrial sites.

The data released shows Scotland's long-term pollutant emissions from SEPA regulated businesses fell between 2008 and 2018 as the country continues its transition to a more sustainable future. Pollutant releases have decreased across most major pollutant groups over the past ten years.

Some of the decreases, such as those of greenhouse gases, are partly due to the ongoing greening of the grid. Others are directly related to environmental policy and new technologies such as investment in renewables, river basin management plans and landfill gas recovery systems.

Overall reductions in greenhouse gases

The two largest contributing pollutants in terms of number of sites reporting and emissions are carbon dioxide and methane which drive the overall greenhouse gas trend. The closure of Cockszie and Longannet coal-fired power stations are largely responsible for the reduction of carbon dioxide by over 13.8 Megatonnes (54%) since 2008.

Levels of other greenhouse gases (Methane, nitrous oxide and sulphur hexafluoride) have also fell over those ten years. The most significant of these reductions is the fall in 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. The reduction of over 50% since 2008 is a consequence of the capture of gas at landfill sites and the reduction of organic waste going to these sites.

Pollutant	Emissions (kg)			Change between years	
	2008	2017	2018	2017 to 2018	2008 to 2018
Carbon dioxide	25,700,000,000	11,500,000,000	11,900,000,000	up 3%	down 54%
Methane	56,800,000	32,500,000	27,800,000	down 14%	down 51%
Nitrous oxide	317,000	89,600	88,900	down 1%	down 72%
Perfluorocarbons (PFCs)	12,000	4,360	4,410	up 1%	down 63%
Hydrofluorocarbons (HFCs)	1,770	1,050	3,520	up 235%	up 99%
Sulphur hexafluoride	1,030	134	107	down 20%	down 90%
Total (to 3 significant figures)	25,800,000,000	11,500,000,000	11,900,000,000	up 3%	down 54%

Energy transition

Reflecting the realism of a transition economy and demand from the grid from the 2018 ‘Beast from the East’ severe weather event, SEPA regulated sites recorded a 3% increase in greenhouse emissions. While renewable generation in Scotland has increased by almost 70% since 2008**, the 2018 increase in greenhouse gas emissions is largely due to a 0.96 Megatonne rise in carbon dioxide emitted from Peterhead Power Station, operated by Scottish and Southern Energy (SSE).

SSE Peterhead, a gas-fired thermal facility is designed to respond quickly to market changes, maintaining security of supply. Now the only large scale thermal power station in Scotland, the site ran for roughly twice as many hours in 2018 in respond to demand, impacting its emissions from the previous year.

CCGT stations, like Peterhead, are generally considered as least polluting large scale thermal generation technology and are necessary in the shift to renewable energy generation.

Increases in emissions

The intensive livestock sector showed an increase in methane emissions during 2018 which is relatively large in terms of the sector (15%) but is equivalent to a 0.0006% increase in the total quantity of SPRI greenhouse gases released. The increase is due to the permitting of four new facilities and capacity increases at several existing sites.

Hydrofluorocarbons (HFCs – also known as F-gases) are commonly used in refrigeration. 2018 saw a 235% increase which is equivalent to a 0.00002%

increase in the total quantity of greenhouse gases released. This was due to accidental releases from two regulated sites, with SEPA action leading to investment in alternative refrigeration technologies being introduced by October 2020.

Year-to-year changes 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 large increase.

Other increases are mostly related to an increase in production or variations in combustion fuels. There were also 16 more sites reporting in 2018.

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

"The most successful countries in the 21st century will be those that thrive within our planet's means to support them. Through our regulatory strategy, One Plant Prosperity, SEPA is helping Scottish business grow sustainably while reducing their environmental burden.

"The annual SPRI data from regulated sites is a very visual demonstration of the progress we've made as a nation in the last decade as a result of our climate leadership. It also reflects the realism of a transition economy where there will be movement in individual metrics such as energy.

"Scotland's globally ambitious climate change and circular economy strategies continue to drive systemic change in business practice and are vital to the link between economic, environmental and social wellbeing."

ENDS

NOTES TO EDITORS:

- * Rise from 3,353 MW in 2008 to 11,036 MW in 2018 according to Scottish Renewables – scottishrenewables.com/forums/renewables-in-numbers/
- ** Mass emissions from SEPA regulated industrial sites reporting SPRI pollutants above threshold limits. SPRI has a [threshold value for each pollutant](#) – substances considered to be environmentally significant and of interest to the public. These thresholds are set at a UK level (reflecting EU levels) and are designed to capture 95% of the UK's total emitted pollutants for the particular substance.

The SPRI data can be accessed on SEPA's website at www.sepa.org.uk/spri

- There were 866 sites reporting above thresholds in 2018, compared to 850 in 2017.
- 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, water and land 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](#).