Sustainable Scotland Network

LOCAL GOVERNMENT

Perth and Kinross Council

NATIONAL HEALTH SERVICE

Dumfries and Galloway NHS

LOCAL GOVERNMENT

East Dunbartonshire Council

EDUCATIONAL INSTITUTIONS

Abertay University

# PUBLIC BODIES CLIMATE CHANGE REPORTING

## 2020/21

## Analysis Report

NATIONAL HEALTH SERVICE

The Scottish Ambulance Service Board

OTHERS

NatureScot

OTHERS

The Scottish Police Authority

EDUCATIONAL INSTITUTIONS

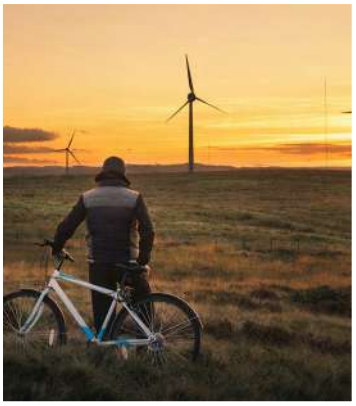
University of Edinburgh

LOCAL GOVERNMENT

Argyll and Bute Council

LOCAL GOVERNMENT

Aberdeen City Council



# Contents



# Executive Summary

Scotland's world-leading climate change legislation sets a target date for net zero emissions for all greenhouse gases by 2045. Public sector bodies play a key role in meeting this ambitious target and have a statutory duty to cut greenhouse gas emissions, prepare for the impacts of climate change, act sustainably and report annually on how actions have been taken to comply with these duties.

This report presents summary analysis and key findings from public sector bodies' annual reports for the reporting period 2020/21. This is the 6th reporting period since mandatory reporting began in 2015/16.

**Reported emissions from the public sector continue to decrease**. Emissions from heating, transport and electricity reduced by 5.8% since the last reporting period and by 32.6% since mandatory reporting began for 2015/16. The **consumption of grid electricity fell** since 2019/20, representing 40% of the total drop in consumption since reporting began (2015/16). Such a significant annual change is no doubt attributable to the impact of pandemic measures, especially as staff numbers increased by 7.7% over the same period.

**Direct emissions** (Scope 1) from heating the public sector estate, use of fleet vehicles and process gases increased 1%, due in part to 2020/21 being colder than 2019/20 and more bodies reporting than previously but it is within the margins of error. Analysis does not indicate a drop in emissions from direct fuel use, especially for heating, as might have been expected for those estates impacted by homeworking mandates and lockdowns. Anecdotally, many public sector buildings (with the obvious exception of the NHS) were operating at up to 75% occupancy rates, even during lockdowns, in order to meet health, safety and security requirements.

**Emissions reduction projects**, ranging from energy efficiency measures to waste reduction and recycling, increased savings by 3.6% compared to 2019/20. Over 60% of savings relate to electricity and waste projects with Local Authorities still owning the largest share (65% of total savings) however Educational Institutions almost doubled emissions savings to c.5% of their sector's footprint and 21% of total project savings.

Emissions savings from all reported **renewable energy generation** decreased by 10% from 2019/20. This is driven by a 7% drop in renewable energy generation and the reduced carbon intensity of the grid meaning less savings per avoided unit of grid consumption. The balance remains consistent at two thirds renewable heat and one third renewable electricity generation. Local Authorities generated 68% of renewable heat and the largest share overall of renewable power (54%). Apart from 37% of renewable electricity being generated by Local Authorities most electricity generation is by Others, with large-scale hydropower and biogas combined heat and power plants dominating in terms of scale.

More than 78% of public bodies reported having one or more **emission reduction targets**, ranging from an overall corporate emissions target to a specific activity or emission source. The number of bodies reporting a **net zero target** increased by eight from 2019/20 to a total of 30, representing almost 44% of total reported emissions. This is an under-representation, however, as net zero targets apply across some sub-sectors, for example NHS Scotland's recently strengthened commitment to net zero by 2040 and Scotland's colleges commitment also to net zero by 2040. Of these 30 bodies, 21 have set a net zero target ahead of the national policy deadline of 2045, however, the targets cover a mix of activities and sources including, in many instances, emissions associated with water, waste, travel and procurement of goods and services i.e. Scope 3.

Emissions arising from the **procurement of goods and services** plus embedded carbon remain largely un-reported since the onset of reporting in 2015/16. This is set to change with public bodies having additional reporting requirements going forward which will introduce new challenges including targets for zero direct emissions and for reducing indirect emissions and aligning spend and resources with target delivery.

While progress has been made over the years, **greater transformational change is needed** across the public sector to bring steeper cuts in emissions at faster pace. This cannot rely solely on technical solutions such as converting gas grids to hydrogen or full decarbonisation of the electricity grid. It requires investment in skills and capacity to support clear and well-informed decision-making. Only by integrating knowledge and expertise on climate action, impacts and sustainability as part of broader **governance and management** will public sector leaders be able to: carve a realistic path to zero direct emissions; and help influence others especially where support and collaboration is needed to meet ambitious net zero indirect emission targets.

This report also highlights a range of actions and initiatives undertaken by public bodies to **adapt to and prepare for the impacts of global climate change** which are already locked in. An initial approach to analysing the information provided on public bodies' climate change adaptation is presented. This structure and content may change in future reports and feedback is welcome.

# Background

All public bodies, in exercising their functions, have a duty to:

- contribute to delivery of Scotland's national net zero target (mitigation – reducing greenhouse gas emissions);
- help deliver Scotland's climate change adaptation programme (adaptation – resilience to the impacts of a changing climate); and
- act sustainably (sustainable development as a core value)

**Section 44, Climate Change (Scotland) Act 2009**

The **Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015** requires public bodies listed in **Schedule 1**[1] to provide an annual report by 30th November each year on compliance with the above duties. The annual report includes information regarding:

- Profile of the body – e.g. budget and staff numbers
- Climate change governance, management and strategy
- Corporate emissions, projects and targets
- Adaptation – including risk assessments and management
- Procurement – how policies and activities contribute to climate change
- Validation of report data and information

Public bodies may also report on their 'wider influence' on climate change and sustainable development. This section of the report is currently voluntary and does not inform the summary analysis.

Scotland's unique reporting duty has been widely credited with driving climate action, tracking progress across the public sector in reducing greenhouse gas emissions and highlighting valuable insights on good practice in adopting more sustainable delivery of services and the exercise of public sector functions.

[1] As amended by The Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020.

# Overview

Reports were received from 178 out of a total of 186 listed public bodies, representing >95% compliance. Eight IJBs did not make a submission. The summary analysis presented in this report is largely based on quantitative data provided under Part 3: Emissions, Targets and Projects. It excludes IJBs as all IJB reports refer to data provided in the corresponding NHS Board and/or Local Authority reports[2]. One educational institution report was received too late to incorporate emissions data in the analysis but this is inconsequential to overall findings[3]. This analysis therefore draws on 156 reports compared with 141 reports that were analysed for the 2019/20 period, see Public Bodies Annual Climate Change Reporting 2019/20, SSN March 2021.

Reports were submitted for the first time from **six additional public bodies**:

- Forestry and Land Scotland
- Public Health Scotland
- Scottish Forestry
- Social Security Scotland
- South of Scotland Enterprise
- The Scottish National Investment Bank

Being new to reporting most of these bodies are in the process of putting governance, management and data monitoring systems in place in order to mature reporting quality and efficacy. The emissions data that they provided represents only 0.2% of overall public sector emissions but this will increase over time.

The reporting period 2020/21 largely coincided with the height of Covid-19[4] pandemic restrictions, including lockdown periods and homeworking mandates. These emergency measures, plus a host of other safeguards and restrictions during an unprecedented period of disruption and uncertainty will have affected emissions. This report does not attempt to quantify or attribute changes due to pandemic measures other than an estimate of emissions due to staff working from home (WFH). These emissions are not necessarily a displacement of public sector estate emissions, large parts of which were still operating, albeit at reduced capacity in some cases.




[2] Argyll & Bute IJB reported some emissions separate from NHS Highland but to simplify presentation of results these emissions have been attributed to the NHS sector.

[3] This was a small college co-located with the local authority. The emissions reported by the college represent <0.01% of total public sector emissions.

[4] Referred to as “the pandemic” throughout this report.

# Key facts and figures

**Number of reports[5]**
178
(>95% compliance)

**Staff (FTE)**
491,297

**Emissions ($tCO_2e$)[6]**


**Reduction in Scope 1 and Scope 2 emissions compared to 2019/20**
5.8%

**$tCO_2e$ saved due to carbon reduction projects**
80,596

**Renewable energy generated**
292 GWh

## Number of reports by sector

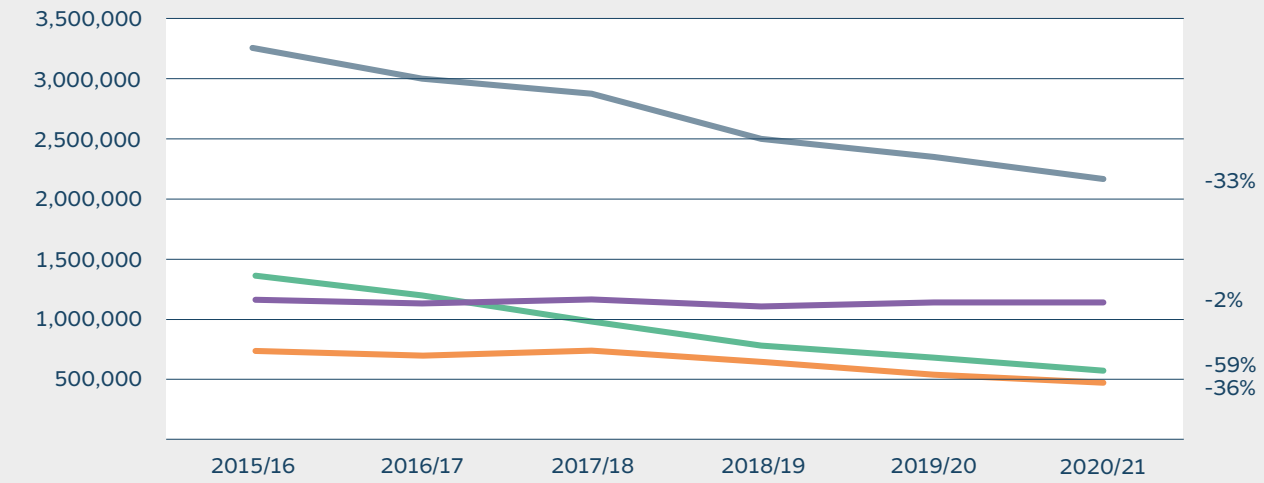
| Sector | 2020/21 | |
|---|---|---|
| | Number of reports received | Number of bodies in sector |
| Local Authorities | 32 | 32 |
| National Health Service | 19 | 19 |
| Educational Institutions | 44 | 44 |
| Transport Partnerships | 7 | 7 |
| Others[7] | 54 | 54 |
| Integration Joint Boards | 22 | 30 |
| Total | 178 | 186 |

[5] This includes one report received too late to include data in the full analysis but representing <0.01% of total emissions.

[6] $CO_2e$, or carbon dioxide equivalent, is a standard unit for measuring carbon footprints and includes the different greenhouse gases in one unit. $tCO_2e$ refers to tonnes $CO_2e$.

[7] Includes a range of national and regional bodies plus Scottish Ministers, Parliament, Police and non-Ministerial administrative bodies.

## Trends in reported emission scopes since 2015 ($tCO_2e$)




| | 2015/16 | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
|---|---|---|---|---|---|---|
| Scope 1 | 1,158,400 | 1,132,344 | 1,156,837 | 1,107,785 | 1,130,112 | 1,138,573 |
| Scope 2 | 1,369,236 | 1,198,287 | 981,931 | 765,992 | 678,082 | 565,392 |
| Scope 3 | 740,956 | 692,254 | 744,020 | 631,852 | 545,708 | 471,064 |
| Total | 3,268,592 | 3,022,885 | 2,882,788 | 2,505,629 | 2,353,902 | 2,175,029 |

## SPOTLIGHT: Communication

**South Lanarkshire Council** has taken an innovative step in communicating its action on climate change duties to a wider audience. They have produced a short animation that conveys key points from their 2020/21 report.

The video is posted on social media channels and can be viewed on YouTube

# Key findings

- Total emissions have reduced by a third since reporting began in 2015/16 and by almost 8% since the 2019/20 reporting period.
- The emission factor for the UK electricity grid fell by an average 9% since the last reporting period due to less coal and more renewables contributing to the energy mix.
- The most pronounced drop has been for electricity, 59%, however the UK grid has decarbonised by 40% over the same period so emissions reduction due to active measures is potentially closer to 20%. A 17% reduction since last year is partly due to an average 9% reduction in the UK electricity grid carbon intensity and also impacts arising from pandemic safety measures with many staff working "... from home. However, as detailed later in the report, real savings have been achieved through energy efficiency measures and renewables projects.
- Direct emissions, mainly heating and fuel use for fleet vehicles, show little change (-2% over 5 years) and a very marginal increase since 2019/20, potentially due to 2020/21 being a colder year and also emissions reported from additional bodies.
- Indirect emissions have dropped by a third since 2015/16 and by 8% in the last year. Although there is substantive room for improvement on indirect emissions reporting there is a progressive increase in the range of emission sources being reported year-on-year and this is expected to continue, especially as the new reporting duties take effect.

**NB:** The scale of data has grown over the last 5 years, e.g. more bodies are now reporting and individual bodies are trying to capture more data, so the trends above underestimate real progress made e.g. on energy efficiency. As governance and data management matures over time the scope and volume of emissions data is expected to grow; i.e. the public sector collective reporting boundary will effectively expand, generating a substantive increase in e.g. indirect emissions from the procurement of goods and services.

# Corporate Emissions

**All sectors reported a decrease in emissions compared to 2019/20, except for a marginal increase across the NHS.**

Public bodies report on their corporate greenhouse gas (GHG) emissions[8] which include emissions from operation and management of the estate, owned assets and service delivery. The public body determines what to include in its reporting boundary. This is generally based on what is within financial control, typically heating, electricity, fleet, waste, water and business travel plus increasingly the procurement of goods and services. In some instances, particularly for smaller bodies that are based within a larger public sector estate, it is not always feasible to pro-rata emissions on the basis of percentage occupancy or floor area. Emissions may only be reported by the larger, host organisation, for example, transport partnerships based within Local Authorities. Similar issues can arise in respect of shared services such as for water and waste. As more activities come under consideration e.g. procurement, the boundaries will expand resulting in larger overall footprints. The sector is active in driving consistency and good practice to help improve reporting and better inform action.

- Local Authorities demonstrate a step change in emissions with a reduction of 11.4% since 2019/20 but they still represent the largest share of total emissions at 44%, a marginal reduction on 46% share reported previously.
- National Health Service emissions have remained fairly flat over the last three years with an insignificant increase of less than 1% since 2019/20. Given the impact of the pandemic a larger increase in emissions may have been anticipated.
- Remaining sectors demonstrate steady declines in annual emissions with larger year-on-year reductions than previously. This probably reflects to a considerable extent the impact of pandemic measures, reducing transport and travel-related emissions in particular.

## i. Emissions reported by sector

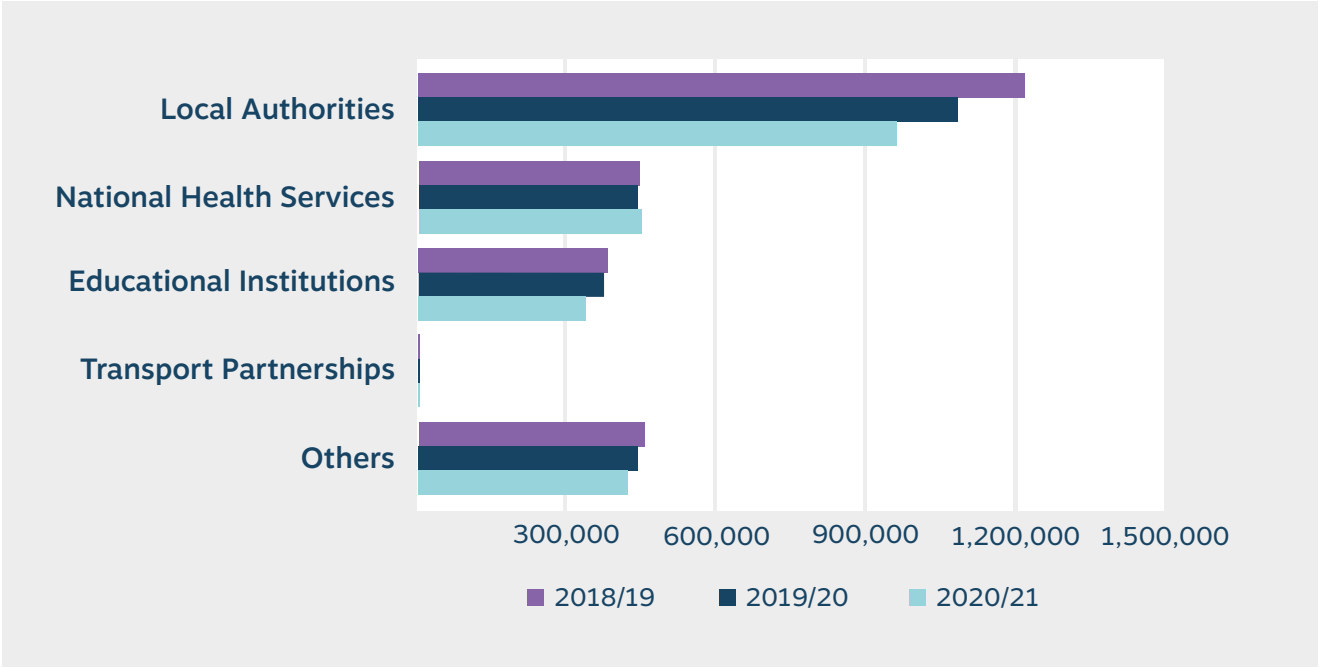
| Sector | Emissions ($tCO_2e$) | | | % change from 2019/20 |
|---|---|---|---|---|
| | 2018/19 | 2019/20 | 2020/21[9] | |
| Local Authorities | 1,218,438 | 1,087,513 | 963,554 | -11.4% |
| National Health Service[10] | 444,052 | 442,735 | 446,586 | 0.9% |
| Educational Institutions | 381,801 | 375,635 | 338,825 | -9.8% |
| Others | 455,801 | 442,982 | 421,766 | -4.8% |
| Transport Partnerships | 5,537 | 5,036 | 4,297 | -14.7% |
| Total | 2,505,629 | 2,353,902 | 2,175,029 | -7.6% |

[8] Reported as tonnes of carbon dioxide equivalent, $tCO_2e$.

[9] 14 more reports were analysed than for 2019/20 however these are all relatively small in terms of overall emissions.

[10] The National Health Service is undertaking a review to improve the accuracy and completeness of emissions for subsequent reporting periods.

## Total emissions by sector ($tCO_2e$)




## SPOTLIGHT: International Initiatives

**The City of Edinburgh Council** decided to respond to the Carbon Disclosure Project (CDP) in 2020 and 2021 to meet reporting requirements for the Global Covenant of Mayors (GCoM), of which it is a member. To ensure compliance with GCoM, a number of the CDP questions are mandatory. The sustainability team worked with several internal and external stakeholders to gather inputs to prepare a comprehensive response which means all relevant climate-related data is now centralised in the CDP disclosure. The team has also benefited from free feedback from CDP on their disclosure, which helped the Council with calculating a city-wide emissions inventory that is in line with international frameworks and provides international credibility.

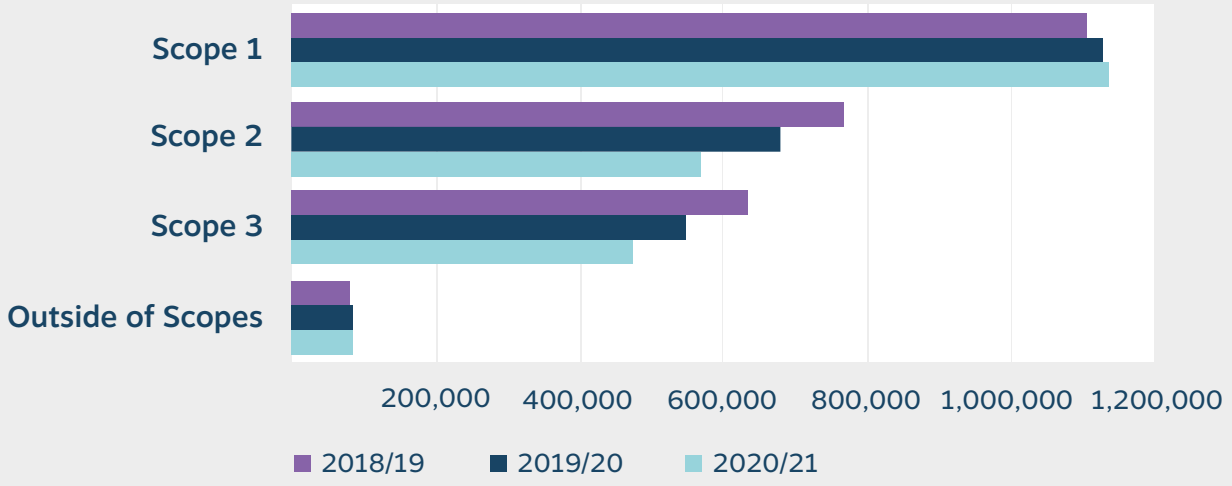
In 2021, Edinburgh was one of just 95 cities world-wide (and the only Scottish city) to be placed on the CDP Cities A list, meaning it is recognised by CDP as a city that is taking bold leadership on environmental action and transparency.

## ii. Emissions reported by Scope[11]

While there is some variability, discussed above, the majority of bodies include emissions from gas, fuel use and electricity consumption (Scopes 1 & 2). Inclusion of emissions from other activities such as water, waste, non-fleet business travel, and procurement (Scope 3) varies across the sector. Again, where services such as waste and water are shared, data is not always readily available to provide pro-rata emissions. See tables on sector reporting percentages against separate scopes further below.

| Scope | Emissions ($tCO_2e$) | | | % change from 2019/20 |
|---|---|---|---|---|
| | 2018/19 | 2019/20 | 2020/21 | |
| Scope 1 | 1,107,785 | 1,130,112 | 1,138,573 | 0.7% |
| Scope 2 | 765,992 | 678,082 | 565,474 | -16.6% |
| Scope 3 | 631,852 | 545,708 | 471,064 | -13.7% |
| Outside of Scope (OOS)[12] | 75,133 | 78,393 | 77,742 | -0.8% |
| Total (excluding OOS emissions) | 2,505,629 | 2,353,902 | 2,175,029 | -7.6% |

### Emissions by scope ($tCO_2e$)




[11] For more information on emission scopes, see Chapter 4 of the GHG Protocol Corporate Standard.

[12] Out of scope emissions are "direct $CO_2$ emissions from biologically sequestered carbon (e.g. from burning biomass/biofuels) and are reported separately from the scopes." (GHG Protocol Standard).

## Scope 1

Direct emissions largely from “heat and fleet” have remained flat compared to 2019/20. Temperatures, on average, were slightly cooler in 2020/21 and this, in addition to more reports being analysed, may account for the observed 0.6% increase in natural gas consumption (kWh).

### Percentage of bodies in each sector reporting Scope 1 emissions

| Sector | Natural gas | Other heating fuel | Transport Fuel | Refrigerants | Renewables | Process gases[13] |
|---|---|---|---|---|---|---|
| Local Authorities | 91% | 97% | 84% | 0% | 81% | 0% |
| National Health Service | 74% | 68% | 47% | 16% | 37% | 11% |
| Educational Institutions | 89% | 39% | 41% | 36% | 27% | 9% |
| Others | 78% | 37% | 30% | 13% | 19% | 6% |
| Transport Partnerships | 29% | 0% | 0% | 0% | 0% | 0% |
| Average | 81% | 52% | 45% | 17% | 35% | 6% |

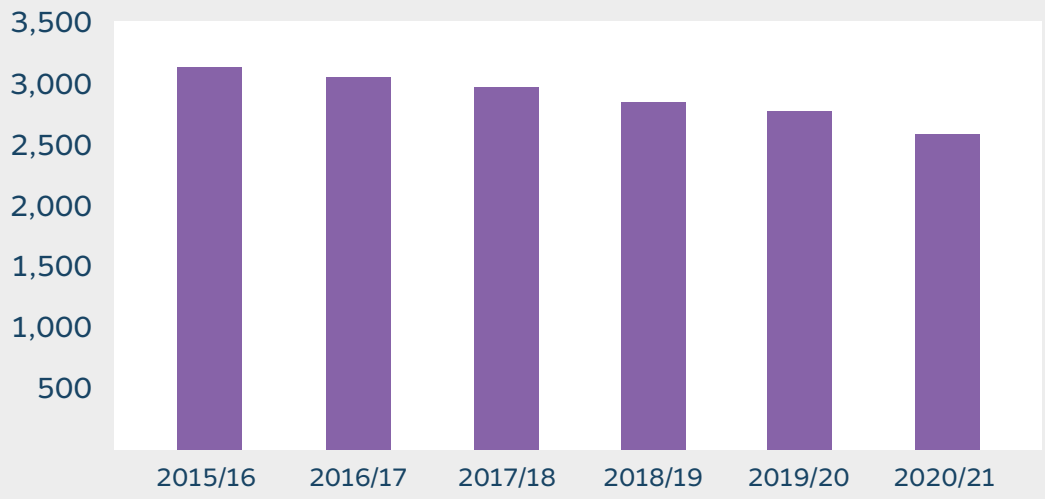


[13] Mainly from sewage sludge treatment and from the use of medical gases.

## Scope 2

Indirect emissions from electricity use and purchased heat and steam shows the biggest change compared to 2019/20. The national grid emission factor fell by an average 9% and consumption reduced by 7.2% which is significant compared to an 18% drop since 2015/16. This is due, no doubt, to reduced occupancy of estate, especially during pandemic lockdowns.

### Grid electricity consumed (GWh)




### Percentage of sectors reporting Scope 2 emissions

| Sector | Electricity |
|---|---|
| Local Authorities | 100% |
| National Health Service | 95% |
| Educational Institutions | 98% |
| Others | 85% |
| Transport Partnerships | 57% |
| Average | 92% |

## Scope 3

Other indirect emissions have decreased by over 12%. This is due in part to a reduction in emissions associated with transmission and distribution losses across the UK grid for which the emission factor dropped by 6% since the 2019/20 reporting period. Increased diversion of municipal waste from landfill to incineration and refuse-derived fuel is also a key factor. In addition, 33 bodies reported increased recycling rates. Lastly, the pandemic including lockdown periods, has impacted waste production levels and business travel.

### Percentage of bodies in each sector reporting the most common Scope 3 emissions

| Sector | Travel | Waste | Water | Homeworking |
|---|---|---|---|---|
| Local Authorities | 91% | 84% | 81% | 63% |
| National Health Service | 58% | 84% | 74% | 37% |
| Others | 80% | 67% | 70% | 72% |
| Transport Partnerships | 86% | 43% | 43% | 71% |
| Average | 83% | 79% | 78% | 66% |

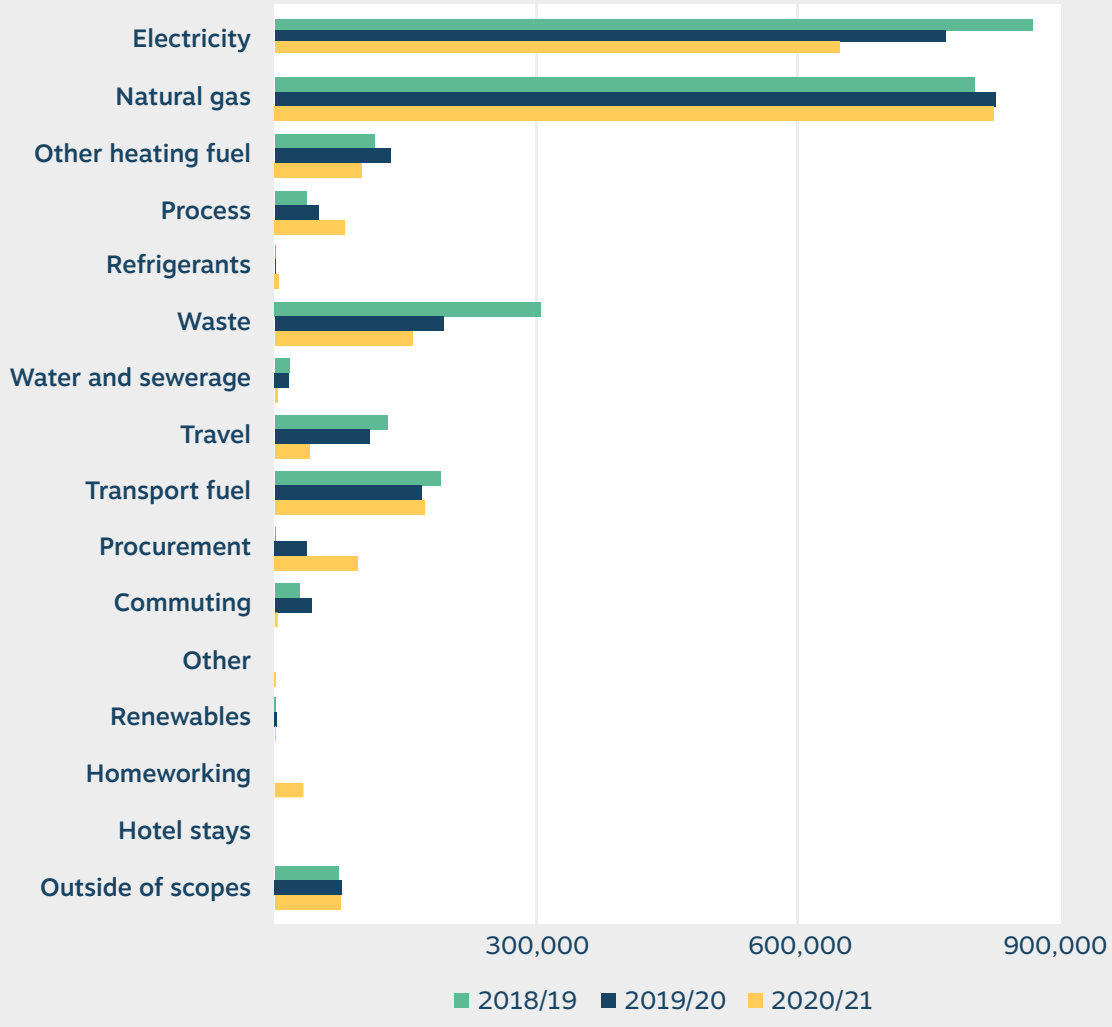
## SPOTLIGHT: Waste

**East Ayrshire Council** reported a change in municipal waste streams and volume as a consequence of pandemic measures. Over 41% of household waste was either recycled or composted, and almost 11% was recovered using other diversion methods, meaning 48% of waste ended up in landfill. Services have since recovered however it remains to be seen if consumer habits have been affected long-term with more waste being generated at home as more flexible, hybrid working models take effect. New, targeted recycling promotions may be required longer-term. Cleaner Communities is exploring a food waste campaign as this formed a significant percentage of the landfill stream.

## iii. Total emissions by source

| Sector | Emissions ($tCO_2e$) | | | % change since 2019/20 | % of total emissions |
|---|---|---|---|---|---|
| | 2018/19 | 2019/20 | 2020/21 | | |
| Natural gas | 804,041 | 827,319 | 826,506 | -0.1% | 38% |
| Electricity | 869,585 | 769,855 | 648,441 | -16% | 29.8% |
| Transport fuel | 191,250 | 169,855 | 173,313 | 2% | 8.0% |
| Waste | 306,879 | 195,301 | 159,162 | -19% | 7.3% |
| Other heating fuels | 116,046 | 133,744 | 100,342 | -25% | 4.6% |
| Procurement | - | 35,649 | 94,864 | 166% | 4.4% |
| Processes | 36,717 | 49,854 | 81,059 | 63% | 3.7% |
| Travel | 130,801 | 109,248 | 39,713 | -64% | 1.8% |
| Homeworking | - | - | 32,400 | - | 1.5% |
| Commuting | 27,785 | 40,665 | 5,522 | -86% | 0.3% |
| Refrigerants | 1,921 | 1,511 | 5,251 | 248% | 0.2% |
| Water | 17,392 | 16,565 | 4,493 | -73% | 0.2% |
| Renewables | 3,073 | 3,632 | 2,098 | -42% | 0.1% |
| Other | 141 | 705 | 1,690 | 140% | <0.1% |
| Hotel stays | - | - | 174 | - | 0.01% |

## Total emissions by source ($tCO_2e$)



## Key findings

- Electricity and gas consumption comprise two thirds of total reported emissions.
- 2020/21 was colder than the previous reporting period. Accounting for degree days, natural gas consumption is essentially on a par with previous years.
- Reported waste tonnage to landfill fell by 12% from 2019/20. Tonnage has reduced in recent years due to commissioning of new energy from waste facilities but pandemic lockdowns and changes in working practices will also have contributed, see the Spotlight on Waste.
- Although the number of bodies reporting procurement emissions doubled to six this year emissions from the purchase of goods and services remains significantly under-reported. With the introduction of new reporting duties that took effect from April 2021, however, this will change as more emissions data becomes available. Examples of steps being taken to address procurement emissions are provided in the Spotlight on Procurement.
- Commuting, business travel, waste and water emissions have all reduced dramatically, largely as a result of pandemic restrictions.

## Homeworking emissions

Public bodies were asked to estimate the percentage of staff (as FTEs) that worked from home (WFH) during the reporting year in order to provide a rudimentary assessment of the potential scale of emissions[14]. Sixty six percent of bodies reported emissions, accounting for 52% of total FTEs and 1.5% of total emissions. Estimates from individual bodies of the percentage FTEs WFH ranged from single figures up to 100% in some cases. Two of the Transport Partnerships report staff numbers under the corresponding local authority, therefore the remaining five partnerships reported that 100% of their staff were WFH.

| Sector | No. of bodies reporting WFH emissions | As a % of sector | As a % of FTE staff |
|---|---|---|---|
| Local Authorities | 20 | 63% | 62% |
| National Health Service | 7 | 37% | 26% |
| Educational Institutions | 33 | 75% | 64% |
| Others | 39 | 72% | 71% |
| Transport Partnerships | 5 | 71% | 100% |
| Total | 104 | 66% | 52% |

[14] There is a range of methodologies on assessing emissions from home or remote working. Some also take account of impacts on commuting. A pragmatic approach was adopted, assuming 0.3T $CO_2e$/FTE/annum based on 1.5kg $CO_2e$/FTE/day over 200 days.

## SPOTLIGHT: Procurement

Although emissions reporting related to procurement remains very low there is strong evidence of bodies embedding low carbon and broader sustainability objectives within procurement policies and strategies. Some examples are outlined below:

**Scottish Enterprise's** Sustainable Procurement Strategy requires climate change considerations as part of tender submissions including provision of site waste management plans, waste and resource action programmes and energy consumption, production, and vehicle emissions information, where applicable, for example:

- Edinburgh BioQuarter – works to convert an existing office space area into biomedical labs.
- Energy Park Fife – access road extension works including resurfacing to remedy deterioration and address flooding.
- Winter gritting and snow clearance – winter gritting and snow clearance across SE operational areas.

**The Scottish Police Authority** is considering the inclusion of climate change requirements, in particular the adoption of circular economy objectives, as part of corporate procurement projects.

Recent examples include:

- Procurement of photovoltaic design and installation work to increase renewables generation capacity of estate buildings.
- Uplift and Transportation of Deceased Persons contract included an award criterion on sustainability considerations including initiatives to minimise fuel consumption and vehicle emissions.
- Provision of Radio Sites Portfolio Marketing and Management Services contract evaluated carbon management. The supplier is committed to carbon reduction solutions and has proposed the introduction of new environmental industry developments into site management services.
- Vehicle Hire contract commits the supplier to complying with the Scottish Government sustainable development strategy and ethical policy by supporting the Scottish Government "Greener Scotland" strategic objective.
- Liquid/Bunkered Fuel contract ensures suppliers strategically plan deliveries to ensure they are made in the most environmentally friendly manner. This includes calculating the most fuel efficient routes and combining deliveries where possible.
- Evaluation of tenders for awarding a contract for Supply and Delivery of Vehicle Component Parts included the following criteria:
  - Monitoring of emissions from delivery vehicles
  - Use of fuel from renewable sources
  - Use of an authorised waste management contractor for disposal of waste oil and tyres
  - Use of low rolling resistance tyres
  - Use/plans to use fuel efficient or hybrid cars
  - A company Environmental Policy
  - A Carbon Management policy for company properties
  - Recycling and reuse of packaging
  - Efforts being made to reduce the company's carbon footprint.

**Scottish Water** is engaging its supply chain to help develop improved carbon management as part of the organisation's Beyond Net Zero strategic objective. Scottish Water operates a standardised pre-qualification assessment that all suppliers must complete. At tender stage, suppliers are informed of Scottish Water's intent to reduce embodied carbon associated with its capital investment programme and to reduce operational and supply chain emissions.

Evaluation criteria for awarding framework agreements and major contracts include:

- The suppliers' carbon footprint
- Actions taken and planned to reduce their carbon footprint
- Measurement of embodied emission within the goods/materials to be supplied.
- Commitment, alignment and management in accordance with Scottish Water's net zero objectives.

A condition of contract requires the provision of emissions data to Scottish Water on request. Where relevant Scottish Water also includes other considerations in procurement of goods and services. For example, evaluating whole life operational running costs that may favour more energy efficient equipment albeit the initial capital cost may be higher.

With effect from 2020-2021, suppliers are now required to provide a carbon management plan within two years of the framework award. This encourages framework suppliers to:

- set annual targets for reductions in GHG emissions, both at organisational level and from activities directly associated with Scottish Water activities
- estimate the embodied emissions within the goods and materials supplied for Scottish Water's capital investment programme
- identify opportunities and propose initiatives to support delivery of Scottish Water's climate change duties.

When awarding a multi-supplier framework for supply of quarry materials, Scottish Water identified the best supplier for each of the 514 postcode areas across Scotland to minimise travel distance between the quarry and site where the material is required, ensuring a good geographic spread of suppliers with a mix of regional and national providers.

Ongoing work to manage the emissions impact of Scottish Water's capital investment programme identified a significant data gap relating to the embodied emissions of many manufactured products (pumps, screens, blowers etc.) used to deliver water and waste water services. To address this, Scottish Water developed an Embodied Carbon Calculator (ECC). The ECC was designed for suppliers to enter information about the raw materials and energy used to fabricate their products. It applies standard emissions factors to provide an estimate of the embodied emissions within the product. This is one of several resources offered to suppliers (at pre-qualification stage) as part of the ongoing support that Scottish Water provides to aid suppliers with carbon assessment and management of their products and material supply chains.

> **“ Scottish Water has been recognised as a world leader in the field of procurement by the Chartered Institute of Procurement and Supply (CIPS). In Oct 2013 it became the first company in Scotland, first utility company in the UK and first water company in the world to receive the CIPS Gold Award. In July 2015 it built on that success to become the first public sector organisation, and one of only nine organisations worldwide at the time, to receive the CIPS Platinum Award. ”**

**The Highland Council's** Commercial and Procurement Shared Service (CPSS) assessed a variety of options for Climate Friendly Criteria/Weightings (including comprehensive appraisal of carbon calculator tools) and assessment of how procurement impacts could be monitored and reported upon. Representatives from the CPSS team are involved with three themed corporate Climate Sub-Groups feeding into the Climate Change Plan supporting enabling actions to help integrate climate change considerations within relevant procurement systems and processes, and to build internal awareness of climate change/circular economy principles.

Strategic and practical guidance is provided at key stages, and policy and guidance assists procurers in proactively addressing key aspects of mitigation, adaptation and broader sustainability aims. An increasingly significant number of outcomes relate to "environmental wellbeing" and promote the Council's leadership role in transitioning to net zero.

Tenders for contract are asked to outline commitments on areas such as: energy efficiency in buildings, emissions class of fleet vehicles, effective route planning measures, energy/fuel efficiency measures in buildings/vehicles/operations, minimisation of waste, circular economy initiatives, reuse of materials, carbon neutrality initiatives, reduction of material/ packaging/reduced plastic content of packaging, avoidance of single use plastics etc. Performance against these commitments are monitored during ongoing contract management.

**Fife College** considers sustainability in its procurement activity wherever relevant. Whole-life cost evaluations are used wherever possible to determine estimated contract costs rather than initial purchase costs alone.

Two large contracts retendered in 2020-21 included specifications to help minimise climate impacts:

- Building Fabric & Minor Works: goods and equipment use should minimise impacts on the environment, reduce energy use and identify initiatives to reduce carbon emissions over the life of the contract, some of which included reuse and recycling of paint and flooring into traffic management products.
- Large Vans & Mini Buses: Electric or plug-in hybrid vehicles are specified and all vehicles must optimise fuel efficiency, minimise CO2 output and be fitted with telematics and satellite navigation.

**NHS Scotland Health Boards** include a new mandatory requirement on service providers to detail how they plan to move to net zero in their logistics and supply chain and by what date. Service providers are also asked to describe how they can support NHS Scotland in transitioning to net zero.

# Emission Reduction Projects


**Planned projects increased emissions savings by 3.6% saving 80,596 $tCO_2e$.**

Emission reduction projects are planned activities intended to reduce emissions within the annual reporting period. Projects include measures to reduce energy demand (for example, energy efficiency projects) and to reduce emissions from the supply of energy (for example, renewable energy projects).

Examples of emission reduction projects reported in 2020/21 are listed below.

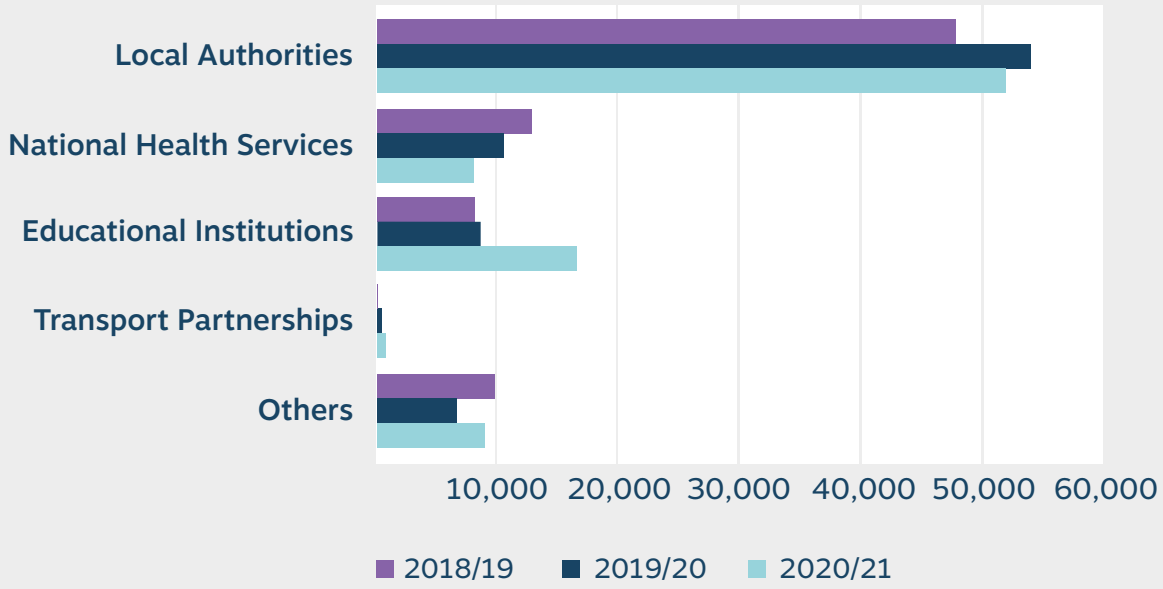
| Emission Source | | Examples |
|---|---|---|
|  | **Electricity** | • Behaviour change and staff awareness projects<br>• Chiller replacements<br>• Energy efficiency measures<br>• IT infrastructure upgrades<br>• LED lighting upgrades<br>• Lighting – internal, external and street lighting<br>• Photovoltaic (PV) panels<br>• Switch off schemes to reduce consumption |
|  | **Heating** | • Biomass boiler installations<br>• Boiler upgrade or replacement<br>• Building Management Systems (BMS) upgrades<br>• District heating network expansion<br>• Draught proofing<br>• Improved energy management during lockdowns<br>• Insulation improvements<br>• Replacement of thermostatic heating valves |
|  | **Fleet transport** | • Expansion of electric vehicle (EV) charging infrastructure<br>• Fleet replacement, including hydrogen and electric vehicles |
|  | **Business travel** | • Sustainable business travel policies to reduce emissions<br>• Video conferencing adoption |
|  | **Waste** | • Diversion of waste from landfill<br>• Energy from waste plants<br>• Reducing use of office consumables<br>• Waste education programmes<br>• Increased paper and plastics recycling<br>• Reuse/repurpose – circular economy projects |
|  | **Water** | • Air temperature cooling systems<br>• Efficiency measures<br>• Leakage reduction<br>• Waterless urinals |

## i. Project savings by sector

| Sector | 2018/19 | | 2019/20 | | 2020/21 | |
|---|---|---|---|---|---|---|
| | Emissions saved | % of subsector emissions | Emissions saved | % of subsector emissions | Emissions saved | % of subsector emissions |
| Local Authorities | 47,885 | 3.93% | 54,083 | 4.97% | 52,036 | 5.40% |
| National Health Service | 10,317 | 2.32% | 7,986 | 1.80% | 2,287 | 0.52% |
| Educational Institutions | 8,251 | 2.16% | 8,612 | 2.29% | 16,551 | 4.88% |
| Transport Partnerships | 2 | 0.04% | 472 | 9.36% | 719 | 16.72% |
| Others | 9,776 | 2.14% | 6,625 | 1.49% | 9,003 | 2.13% |
| Total | 76,231 | | 77,777 | | 80,596 | |

### Project savings by sector ($tCO_2e$)

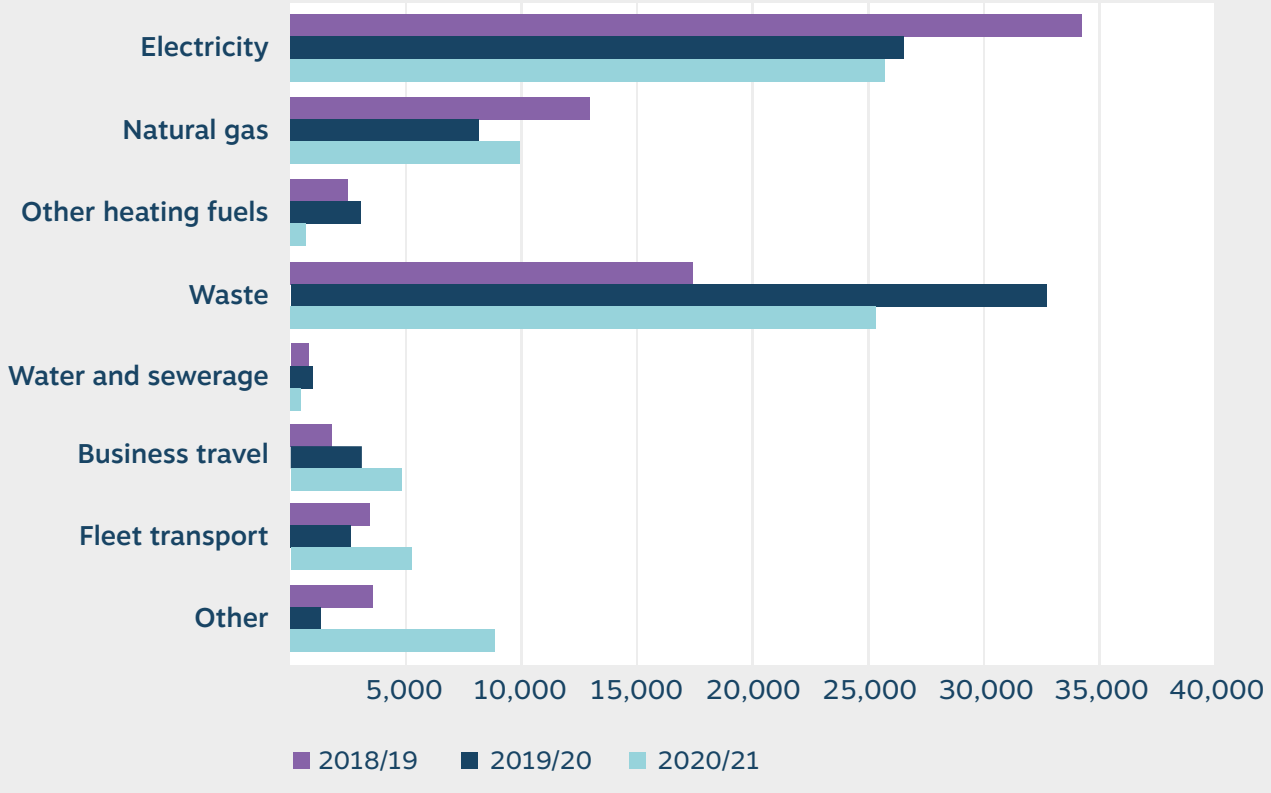
Many projects planned for 2020-21 will have been postponed or cancelled due to pandemic safety measures.



## ii. Project savings by source

| Emissions Source | Emissions saved ($tCO_2e$) | | |
|---|---|---|---|
| | 2018/19 | 2019/20 | 2020/21 |
| Electricity | 34,215 | 26,441 | 25,689 |
| Natural gas | 12,901 | 8,075 | 9,925 |
| Other heating fuels | 2,412 | 2,958 | 620 |
| Waste | 17,366 | 32,619 | 25,248 |
| Water | 674 | 889 | 384 |
| Business travel | 1,713 | 3,018 | 4,726 |
| Fleet transport | 3,394 | 2,543 | 5,211 |
| Other | 3,554 | 1,235 | 8,793 |
| Total | 76,231 | 77,777 | 80,596 |

## Project savings by source ($tCO_2e$)

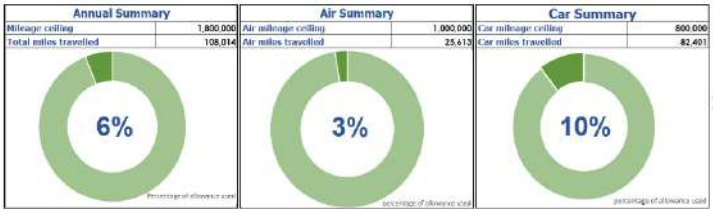


## SPOTLIGHT: Transport and travel

The **Scottish Ambulance Service** has partnered with **NHS Greater Glasgow & Clyde** on an R&D project with Innovate UK funding to work with industry in the design of a hybrid hydrogen-electric fuel cell vehicle that will deliver a solution for the difficult-to-decarbonise, medium/heavy duty transport sectors and will address fundamental limitations that exist with specialist healthcare vehicles built as conversions of existing ICE vehicles. The Scottish Ambulance Service is also transitioning to zero emission two wheel drive vehicles below 3.5 tonne by 2022 with 4 wheel drive variants (primarily for emergency paramedic response) shortly thereafter as manufacturers develop viable specifications.

**Scottish Enterprise**'s Net zero framework for action aims to galvanise organisational expertise and influence networks and funding to help shape and accelerate Scotland's net zero economic transition. It is designed to help align the organisation's programmes and projects with Scotland's climate policy goals including emissions reduction, adaptation, biodiversity improvement, the circular economy, a just transition and new market opportunities. New national programmes have a clear focus on addressing net zero goals in energy, heat and sustainable mobility.

Examples of actions to reduce emissions from travel include:




- capitalising on changing work patterns and behaviours during the pandemic to reduce domestic and international travel
- avoiding domestic flights (with limited exceptions such as connecting flights)
- reducing car travel and capping annual mileage for staff using petrol and diesel vehicles
- actively encouraging staff to switch to public transport (subject to Covid-19 restrictions) and active travel
- exploring opportunities for installing EV (electric vehicle) charging points at offices
- dashboards are being developed (similar to financial budgets) to enable monitoring against targets.

**The University of Edinburgh's** Sustainable Travel Policy was agreed in March 2021 (for implementation January 2022). The policy supports the Climate Conscious Travel approach which aims to reduce travel overall whilst ensuring the safety of staff and students, reducing environmental impacts and improving financial management of travel budgets. It sets out how all local, national and international travel should be undertaken on behalf of the University. The Climate Conscious Travel project was introduced in 2020 to tackle emissions from business travel outside Edinburgh. Climate conscious travel is defined as:

- choosing not to travel when virtual collaboration tools will adequately fulfil the purpose of travel (e.g. for meetings where a video link would suffice);
- ensuring unnecessary travel is not undertaken (e.g. sending the minimum number of individuals required to fulfil the purpose of travel);
- being aware of the environmental impacts of travel and choosing a method of travel that reduces these (e.g. by train rather than plane for travel within mainland Britain).

## SPOTLIGHT: Place-making


**Abertay University** is embarking on a bold and innovative Vision Strategy intended as a catalyst to partnership with others, including Dundee City Council, in transforming the campus and northwest quarter of Dundee city centre. The Strategy builds on existing development initiatives at the campus, recognising the need for an environment and facilities befitting of the University's ambitions that will enhance the student experience. The Strategy will combine multifaceted feasibility and research studies aiming to deliver net zero, biodiversity gain, sustainability, health and wellbeing.

**The University of Edinburgh's** Energy Masterplan provides a long term strategy for maintaining affordable, sustainable, and resilient energy infrastructure at the University whilst meeting carbon goals, ensuring infrastructure aligns with future policy and regulation. A high level techno economic appraisal of likely long term energy infrastructure investment pathways has been developed for each of the main campuses. The Energy Masterplan is structured around an investment hierarchy which prioritises interventions aimed at maximising long term value and financial benefit where possible, namely: eliminating energy waste; minimising energy demand; optimising energy efficiency; and transitioning to low carbon energy sources.

Three levels of energy efficiency investment are modelled across the estate to assess the potential carbon and financial impacts. 'Light efficiency' retrofits demonstrate financial payback within ten years and include heating and ventilation control, lighting upgrades, improved insulation, pump and fan motor upgrades and interventions aimed at making energy intensive laboratories more efficient. 'Deep efficiency' retrofits include a wider scope of building interventions required to transition to 'next generation' heat networks and achieve minimal heat losses. 'Focused' interventions represent the likely refurbishment strategy aligned to the wider Capital Planning programme. These include investments in fabric and glazing and major upgrades to heat distribution systems.



# Key findings

- Emission reduction projects generated carbon savings of over 80,596 $tCO_2e$ representing an increase of 3.6% compared to 2019/20.
- Electricity and waste projects are responsible for over 60% of these savings amounting to around 25,000 $tCO_2e$ each.
- Local Authorities reported the largest savings (52,000 $tCO_2e$), particularly from waste projects. This was also the case in 2019/20.
- The Education sector saved an estimated 17,000 $tCO_2e$ which is almost 5% of the sector's total emissions.
- Emissions saved through gas and electricity projects levelled out after decreasing last year compared to 2018/19.
- Savings from business travel projects increased by 57% from 2019/20 and fleet transport projects more than doubling emissions savings.
- Many projects will have been postponed or cancelled due to pandemic safety measures.

# Renewable Energy Initiatives

10%
in one year

**Emissions savings from renewable energy generation decreased by 10% from 2019/20**

Renewable energy initiatives are an effective means of reducing emissions. Over half of public sector bodies (56%) reported renewables generation, broadly comparable with last year. Nearly all Local Authorities have at least one renewable energy source as do three quarters of educational institutions and almost half of NHS Boards.

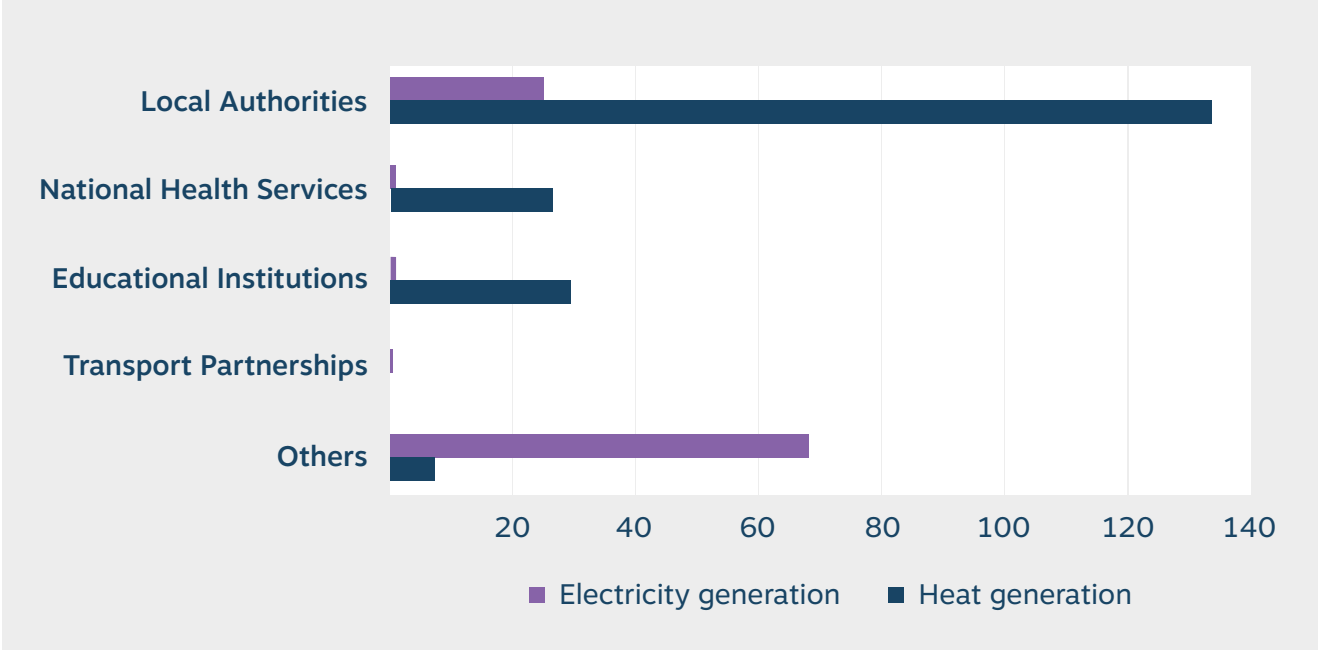
Solar panels and biomass boilers are the most widely reported renewable technologies being adopted, in keeping with the past three years. Other common technologies include heat pumps, solar thermal and wind.



## i. Renewable energy generation (GWh) by sector

| Sector | 2018/19 | | 2019/20 | | 2020/21 | |
|---|---|---|---|---|---|---|
| | Electricity | Heat | Electricity | Heat | Electricity | Heat |
| Local Authorities | 22.97 | 116.50 | 35.48 | 127.43 | 25.11 | 133.89 |
| National Health Service | 0.85 | 37.60 | 0.46 | 36.93 | 0.86 | 26.64 |
| Educational Institutions | 4.42 | 25.98 | 4.26 | 33.45 | 0.90 | 29.57 |
| Transport Partnerships | 0.02 | - | 0.02 | - | 0.01 | - |
| Others | 59.62 | 19.25 | 62.79 | 13.44 | 68.28 | 7.24 |
| Total | 87.87 | 199.33 | 102.99 | 211.25 | 95.16 | 197.12 |

## 2020/21 Renewable energy generation (GWh) by sector



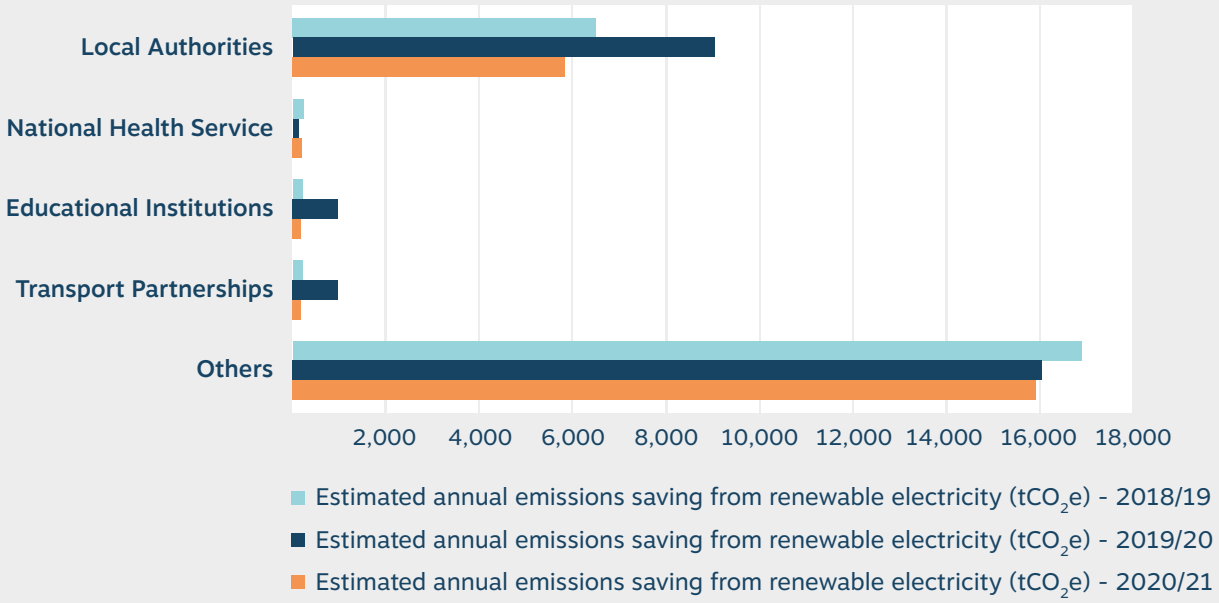

# Key findings

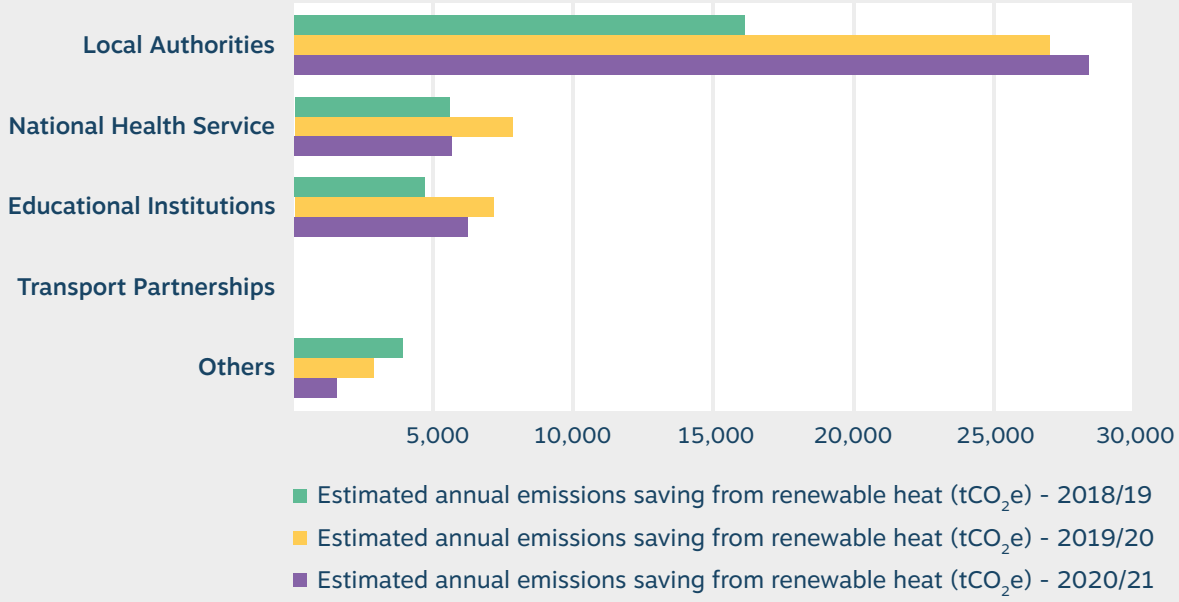
- 95 GWh of renewable electricity and 197 GWh of renewable heat were reported, equivalent to the displacement of c.64,000 $tCO_2e$. This is a decrease of 7% since 2019/20 for total renewables generation.
- 35% of savings are from renewable electricity and 65% from renewable heat generation.
- Local Authorities are responsible for 54% of the reported renewable energy generation during 2020/21.
- Renewable heat is more prevalent than renewable electricity amongst Local Authorities, National Health Service and Educational Institutions.
- Some of the largest generators include Scottish Water's hydropower stations, their biogas CHP plants and The Highland Council's biomass boiler.

## ii. Annual emission savings from renewables

Emissions savings based on energy generation data are shown below.

| Sector | Estimated annual carbon savings ($tCO_2e$) | | | | | |
|---|---|---|---|---|---|---|
| | 2018/19 | | 2019/20 | | 2020/21 | |
| | renewable electricity | renewable heat | renewable electricity | renewable heat | renewable electricity | renewable heat |
| Local Authorities | 6,494 | 16,069 | 9,068 | 26,943 | 5,854 | 28,311 |
| National Health Service | 240 | 5,543 | 117 | 7,808 | 200 | 5,632 |
| Educational Institutions | 248 | 2,095 | 980 | 7,072 | 191 | 6,228 |
| Transport Partnerships | 5 | - | 4 | - | 3 | - |
| Others | 16,876 | 3,891 | 16,040 | 2,841 | 15,918 | 1,531 |
| Total | 23,853 | 30,162 | 26,210 | 44,664 | 22,167 | 41,702 |



# Key finding

- Reported emissions savings from all renewable energy generation has decreased by 10% from 2019/20. This is driven by a 7% drop in the renewable energy generated by bodies and the lower electricity grid factor.

## SPOTLIGHT: Collaboration

Collaboration is key to the public sector transitioning to net zero. **Argyll and Bute Council**, amongst many others, has been actively investigating partnership working and shared opportunities in relation to carbon management initiatives and best practice with public, private and third sector organisations. This will be of particular importance in relation to the Scottish Government's commitment to decarbonise heat/utilise district heating. Examples of collaborative working to date include:

- Using Scottish Water's wastewater network and heat pump technology to heat Council premises. Scottish Government Low Carbon Infrastructure Transformation Programme (LCITP) funding has been secured and a Heat Supply Agreement has been signed to install a solution at the Aqualibrium Leisure Centre in Campbeltown. Project completion early 2021.
- Working with the Isle of Iona community in the development of a district heating scheme which will also possibly heat the local school and schoolhouse. Whilst project development has reached an advanced stage, funding gap options are being explored.
- Developing a joint procurement process with West Dunbartonshire and Inverclyde Councils for residual waste and co-mingled re-cyclate.
- Partnering with Argyll & Isles Coast and Countryside Trust (ACT) to plant displaced native woodland on Council-owned land following felling by Scottish and Southern Electric.
- Working with Community Planning Partners to develop options for regional adaptation, mitigation and engagement.

# Targets

**Targets relating to overall emissions and to building energy use are most commonly adopted, as in all previous years.**

Public bodies have a range of targets to help direct climate change action and emissions reduction. These targets can be overall emission reduction targets (percentage or absolute) as well as policy specific targets relating to emission sources or business activities.

## i. Emission targets by sector

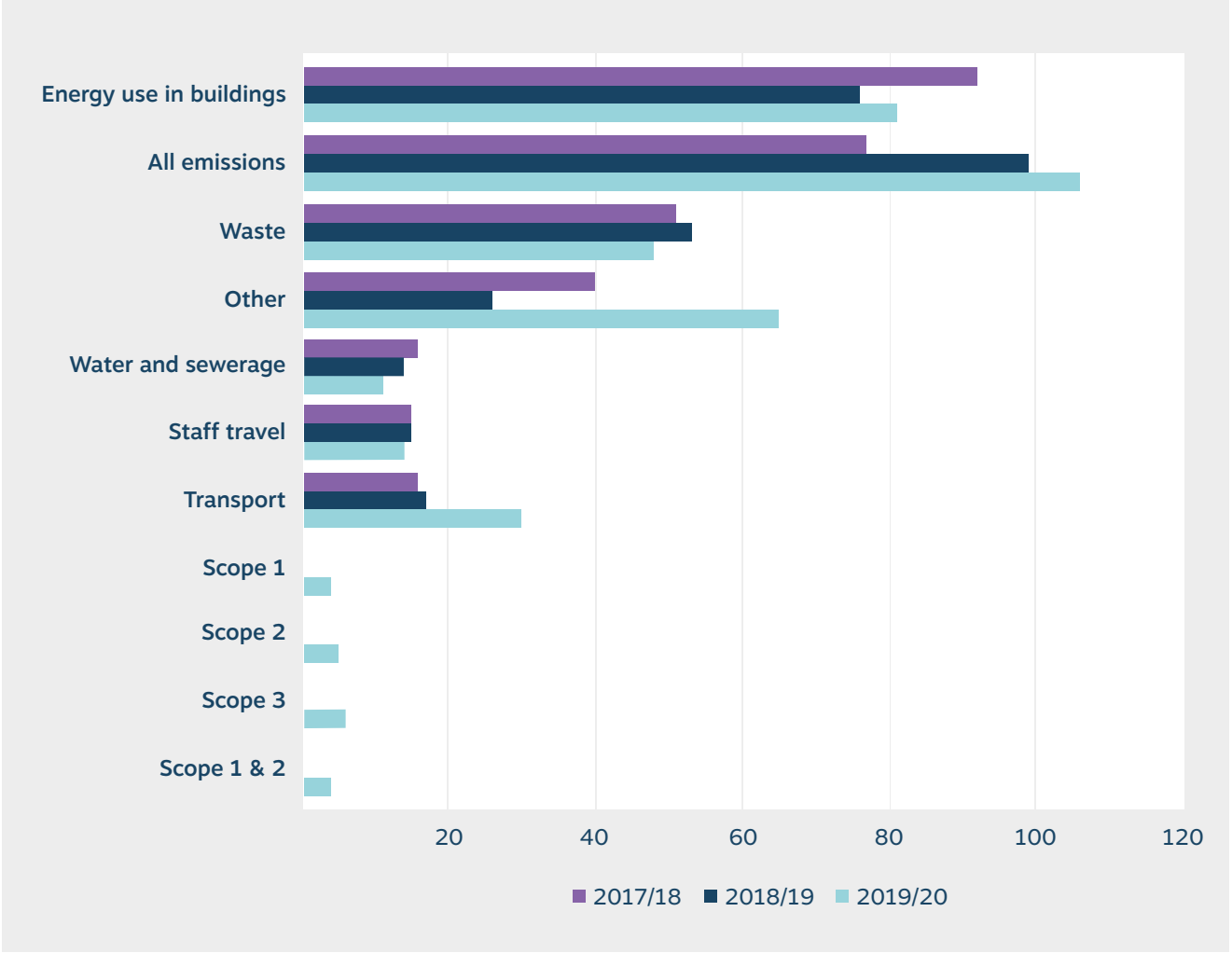
| Sector | Bodies with at least one target | % of organisations | Total targets |
|---|---|---|---|
| Local Authorities | 29 | 91% | 95 |
| National Health Service | 18 | 95% | 58 |
| Educational Institutions | 33 | 75% | 93 |
| Transport Partnerships | 4 | 57% | 9 |
| Others | 38 | 70% | 119 |
| **Total** | **121** | **78%** | **373** |

## ii. Sector targets by emission source or activity

| Target type | Local Authorities | National Health Service | Educational Institutions | Transport Partnerships | Others | Total |
|---|---|---|---|---|---|---|
| All emissions | 25 | 17 | 29 | 1 | 34 | 106 |
| Buildings | 26 | 20 | 11 | - | 23 | 80 |
| Waste | 13 | 4 | 15 | - | 16 | 48 |
| Other[15] | 17 | 13 | 16 | - | 19 | 65 |
| Water and sewerage | 2 | - | 4 | - | 5 | 11 |
| Staff travel | 2 | - | 4 | 1 | 7 | 14 |
| Transport | 8 | 2 | 5 | 7 | 8 | 30 |
| Scope 1 | - | - | 2 | - | 2 | 4 |
| Scope 2 | 1 | - | 2 | - | 2 | 5 |
| Scope 3 | - | - | 3 | - | 3 | 6 |
| Scope 1&2 | 1 | 1 | 2 | - | - | 4 |
| **Total** | **95** | **57** | **93** | **9** | **119** | **374** |

[15] Other targets set include limits on paper use, targets around increasing woodland areas, and targets on emissions per FTE.

## iii. Target types




| Sector | Net zero target reported | Target ahead of 2045 |
|---|---|---|
| Local Authorities | 13 | 9 |
| National Health Service | 2 | 0 |
| Educational Institutions | 8 | 7 |
| Other bodies | 6 | 5 |
| Transport Partnerships | 1 | 0 |

## Key findings

- Over 78% of bodies reported at least one target, this is fairly consistent over the last 4 years (ranging from 75-80%).
- 30 bodies reported having net zero emission targets, an increase of 8 from 2019/20. This accounts for almost 44% of reported emissions.
- The majority of bodies with a net zero target have set it in advance of the national policy deadline of 2045.
- 25 bodies have set a net zero target across all emission scopes which will be extremely challenging to meet. Three bodies have a net zero target that applies to direct emissions (Scope 1) and electricity (Scope 2) only and one body has set a net zero buildings target.

### SPOTLIGHT: Targets

**NatureScot's** property strategy is aligned to the Scottish Government's Estates Strategy, setting the direction of travel for the future of public sector office – carbon and cost reduction, co-location and collaboration, and Smarter Working (smaller, more flexible workspaces). NatureScot's stretch target of Net Zero by 2035 is 10 years earlier than the national target date of 2045. Under these strategies, NatureScot remains committed to its dispersed network of offices, with efficiencies sought at each location as opportunities arise and encouraging Smarter Working and flexible working hours and locations.

Ongoing collaboration with sister organisations have presented various opportunities to co-locate, increasing efficiencies and also considering existing low carbon travel options - active travel, public transport, electric vehicle provision - available at new locations. Taking up surplus space in buildings that were already in the Scottish Government Estate portfolio is resulting in an overall reduction in carbon and cost to the public purse. NatureScot has realised substantive emissions savings by co-locating with other public bodies at two sites – SRUC's Elmwood Campus in Cupar (30%) and HIE at the Enterprise Centre in Lochgilphead (50% for NatureScot and for HIE). Co-location, following some refurbishment including installation of new glazing, heating systems and EV charging points, has also realised cost savings and staff now have open plan spaces that are accessible to visitors and enable better collaboration with partners.

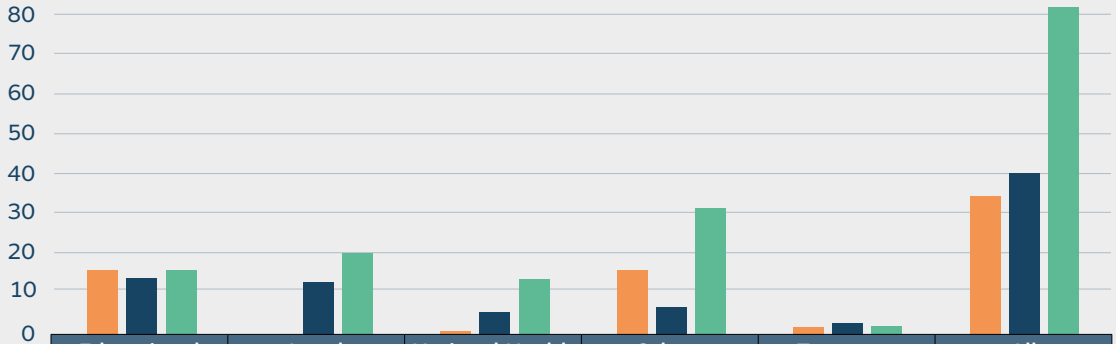
# Adaptation

**Please note: this is an initial approach to analysing the information provided on climate change adaptation. The structure and content may change in future reports and feedback is welcome.**

## Assessment of current and future climate-related risks

The table below shows an initial analysis of climate-related risk assessment reported by sector.

### Climate adaptation risk assessment




| | Educational Institution | Local Government | National Health Service | Others | Transport partnerships | All |
|---|---|---|---|---|---|---|
| None | 15 | 0 | 1 | 16 | 2 | 34 |
| Single issue | 13 | 12 | 5 | 7 | 3 | 40 |
| Strategic | 15 | 20 | 13 | 31 | 2 | 81 |

| | |
|---|---|
| None | No risk assessment conducted (may be planned) |
| Single issue | Single issue risk assessment, usually concerning flood risk, often reactive in response to water ingress, emergency planning with no mention of long-term assessment based on climate projections. |
| Strategic | Assessment looks at all potential risks, including longer-term. |

Broad assessments of all climate-related risks (strategic assessment) can be combined with a series of deeper assessments (looking at specific issues, projects, investments, policy areas or hazards). Decisions on the appropriate mix of risk assessment is likely to be more impactful if based on an organisation's opportunities to influence change and their wider organisational context.

Based on returns, over 50% of all bodies have carried out a strategic risk assessment and 25% have conducted a limited or issue-specific assessment only. The remainder of bodies have reported no assessment; although some have plans to carry out assessments after the 2020/21 reporting period.

All Local Authorities have performed some degree of risk assessment, some 63% being strategic assessments. This is to be expected given the need to protect local community safety and the delivery of core services.

The NHS is the sector with greatest risk assessment coverage: 68% have carried out strategic assessments while a further 26% have assessed risks to a limited extent. Only one NHS Board had not completed a risk assessment during the reporting period, however, it is now underway to be completed in 2022. Again, delivery of critical services in the face of a changing climate necessitates strong understanding of the risks ahead.

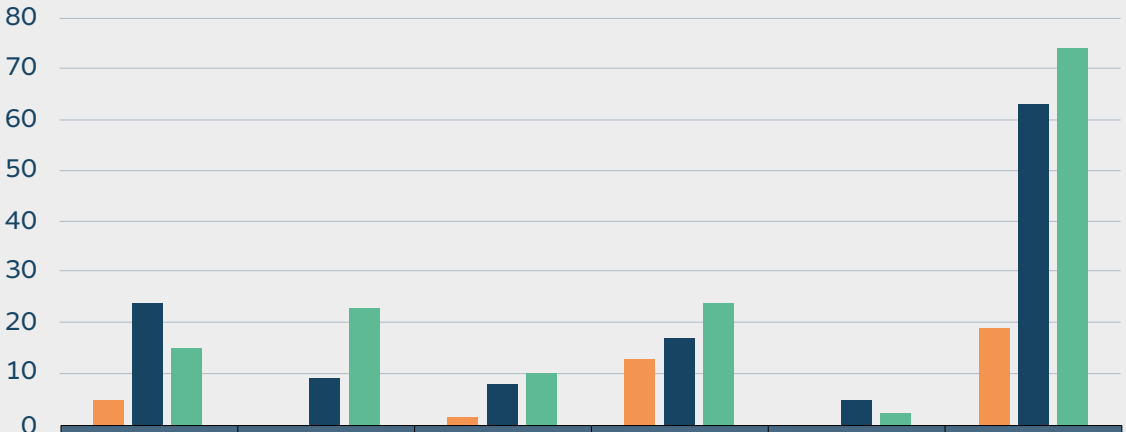
Educational Institutions exhibit a fairly even spread across all three risk assessment categories and, alongside the Other sector, show the biggest gaps regarding any form of risk assessment of all the sectors. Climate-related risk may be perceived as a potentially bigger issue for Educational Institutes with often large or sprawling estates compared to some of the smaller, administrative Other bodies often co-located or in leased premises with less overall apparent risk to business continuity. However, the Other sector reports greater use of strategic assessments compared with Educational Institutions: 57% versus 35% respectively. This is due, in part, to understanding inherent risks to continuity of critical services provided by e.g. blue light organisations and also direct risks to environment and heritage, and associated risks for water supply, sanitation and health. It is also worth mentioning here the interplay of synergies and constraints that need to be risk-assessed in coordinating strategic action on climate mitigation and adaptation.

Transport Partnerships show a mixed bag with reports indicating limited risk assessment which may reflect, to some extent, the differing scale and location of each partnership.

# Managing climate-related risks

The table below shows an initial assessment of reported climate risk management activity by sector.

## Mangement of climate risks




| | Educational Institution | Local Authorities | National Health Service | Others | Transport partnerships | All |
|---|---|---|---|---|---|---|
| Low | 5 | - | 1 | 13 | - | 19 |
| Moderate | 24 | 9 | 8 | 17 | 5 | 63 |
| High | 15 | 23 | 10 | 24 | 2 | 74 |

| | |
|---|---|
| Low | Little or no management activity reported (some bodies report emission reduction measures e.g. energy efficiency etc. here, in error.) |
| Moderate | Typically a single issue focus e.g. managing flood risk, and/or short-term emergency planning approach with little indication of longer-term strategies or governance arrangements in place. |
| High | Strong evidence of mature monitoring and management systems in place with effective governance to minimise current and future risks. |

Based on returns, management of climate risks appears to be well addressed across the sector with c. 87% of organisations reporting some form of risk management activity, and 47% reporting activity that has been categorised as showing 'high' levels of risk management activity.

Local Authorities and Transport Partnerships have the greatest proportion of risk management activity in the 'high' category. The NHS is close behind with only one body classed as having a 'low' level of management activity based on returns, but plans are in progress to improve on this.

Educational Institutions, for the most part, have risk management measures in place categorised as 'moderate' or 'high', with 11% having reported little or no risk management activity.

Other bodies show a progressive spread across all 3 categories, with low activity evident for c.24% of the sector. This is explained in part, as for risk-assessment findings above, as being down to a large cohort of Other bodies for which main risks are related to more administrative, office-based service delivery.

# Adaptation actions and initiatives

There is a diverse range of actions and initiatives provided in public bodies reports. Much of this is in relation to alleviating flood risk and impacts of high and prolonged rainfall. Measures to avoid over-heating e.g. in server rooms and high occupancy areas include transfer of data management to cloud services (effectively off-siting energy consumption) and introducing better means of office thermo-regulation. However, unless passive cooling is adopted this can increase energy consumption and emissions, depending on the power supply.

At a more strategic area level, Local Authority Local Development Plans generally include provisions to prevent exacerbating existing flood risk and minimising future vulnerability by identifying locations for development that require flood risk assessments, the provision of watercourse buffer strips and Sustainable Urban Drainage Systems to avoid surface water flooding. Some plans also adopt a master planning approach to embed adaptation as part of larger developments to enhance biodiversity and improve habitat connectivity via blue and green networks.

The Midlothian Green Network Supplementary Guidance includes design guidelines and principles to ensure that new developments enhance the green network and contribute to climate change mitigation and adaptation by:

- Ensuring habitat connectivity to allow species to adapt to climate change through movement
- Encouraging the retention and expansion of plants and trees to provide opportunities for carbon sequestration and
- Providing water attenuation opportunities to reduce the impact of storm events.

**Midlothian Council** also supports enhancement of the existing green network and retrofitting of new green network components into existing urban areas through other available mechanisms.

# Regional initiatives

There is a range of regional partnership adaptation initiatives across Scotland involving a variety of public sector, private sector, industry and community stakeholders. Examples include:

- Climate Ready Clyde
- Edinburgh Adapts
- Climate Ready Aberdeenshire

Some emerging initiatives include Highland Adapts and Shetland Adapts.

As a member of the Climate Ready Clyde Partnership, the **University of Glasgow** has supported work on improving understanding of how generic adaptation impacts translate into specific risks and opportunities at the Glasgow city-region level. Working with stakeholders the partnership has identified c.80 potential risks and opportunities at the city-region level; c.30 of these are related to city-wide infrastructure, while 15 apply directly to the University of Glasgow estate and its operations. The University's Climate Change Adaptation Plan (2018-2028) groups these into 5 key themes of: Regional Infrastructure; Institutional Governance and Organisational Knowledge; Built Environment; University Community; and Natural Environment. Each theme has a series of short and longer-term objectives to be achieved by 2028.

**Heriot Watt University** and the **Royal Botanic Garden Edinburgh** (RBGE) have partnered to establish a demonstration raingarden at RBGE's Inverleith site to demonstrate the benefits that raingardens can provide in urban spaces for stormwater control, biodiversity gain, garden aesthetics, and microclimate improvements. RBGE has also installed a demonstration plot "Edinburgh Living Landscape" which is a flowering lawn with a mix of 20 native Scottish plant and grass species that requires minimal cutting, is richly biodiverse and is a real alternative to common monoculture domestic grass lawns. They are working with urban landscapers and housing developers to explore ways to foster a step change in societal perception of the domestic garden lawn and urban green spaces.

**South Lanarkshire Council** is participating in the Transboundary Adaptation Learning Exchange (TalX), a collaborative research project funded by the EPA covering Northern Ireland, Republic of Ireland, Scotland, England and Wales.  TalX aims to establish an innovative learning network to enable a cohesive approach for measuring and acting on climate change adaptation across boundaries. Sniffer, which manages the Scottish Government funded Adaptation Scotland programme, forms part of the TalX team.

# Conclusion

- Despite the challenges presented by the pandemic, over 95% of listed public bodies submitted climate change reports, this includes six additional bodies new to reporting. The 5% of bodies not reporting represent an extremely small proportion of the public sector's emissions.
- Emissions have reduced year-on-year since reporting became mandatory in 2015/16. Total reported emissions (including Scope 3 emissions) were 7.6% lower than 2019/20 and over 33% lower than 2015/16. The influence of a cleaner energy supply for the UK electricity grid is a significant factor and electricity consumption reduced by 7.4% since 2019/20, no doubt influenced by pandemic lockdowns and homeworking mandates.
- A marginal increase of 0.6% in natural gas consumption compared to 2019/20 is attributable to 2020/21 being a slightly cooler year.
- Emissions from staff commuting, business travel, fleet and waste are notably lower compared to 2019/20. This is attributed to the impacts of pandemic safety measures, especially periods of lockdown and mandates on homeworking.
- Waste to landfill fell by 12% since the 2019/20 reporting period and waste generation continues to decline with increased recycling rates reported by 33 bodies, especially for glass.
- Emission savings from projects increased 3.6% compared to 2019/20 however some of these savings are as a result of changing work practices required or encouraged due to the pandemic.
- Energy generation from renewable technologies has decreased 7% compared to 2019/20.
- There is a diverse range of actions and initiatives to adapt to climate change provided in public bodies reports. Much of this is in relation to alleviating flood risk and impacts of high and prolonged rainfall. Over 50% of all bodies have carried out a strategic risk assessment and 25% have conducted a limited or issue-specific assessment only. Management of climate risks appears to be well addressed across the sector with c. 87% of organisations reporting some form of risk management activity, and 47% reporting activity that has been categorised as showing ‘high’ levels of risk management activity.

## Further information

All reports submitted since 2015/16 and corresponding SSN Analysis Reports are published on the SSN website and are available to download at:

**https://sustainablescotlandnetwork.org/reports**

More detailed information and background on the analysis is available from SSN.
Please email:

**info@sustainablescotlandnetwork.org**

**SSN would like to thank everyone involved in completing and submitting 2020/21 reports.**

**CONTACT US**

+44 (0)131 650 5326

info@sustainablescotlandnetwork.org

@ssnscotland

**Sustainable Scotland Network**
Edinburgh Climate Change Institute
High School Yards
Edinburgh EH1 1LZ

sustainablescotlandnetwork.org

## About the Sustainable Scotland Network

The Sustainable Scotland Network (SSN) is Scotland's public sector climate change and sustainability network. SSN builds public sector capacity to accelerate action on climate change, in line with the duties placed on public bodies by Scotland's climate change legislation.

SSN shares knowledge, builds capacity, and enables the public sector to collaborate effectively to achieve Scotland's climate change and sustainability commitments.

SSN is supported by the Scottish Government, NHS Scotland, Scotland's Local Authorities, and other public sector bodies. The SSN Secretariat is part of the Edinburgh Climate Change Institute (ECCI) at the University of Edinburgh.

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