



SCOTTISH WATER

Water Industry Commission for Scotland (WICS) ANNUAL RETURN 2025/26

Section C – Carbon Emissions and Net Zero

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Section C – Carbon Emissions and Net Zero

1 Table C0 – Summary

1.1 Overview

Scottish Water has been reporting its annual operational Carbon Footprint (CFP) within its annual reports and sustainability reports since 2006-07, and directly to the Scottish Government since 2014 in line with obligations on public bodies under Scotland's Climate Change Act. The data has been included in the Annual Return since AR22. We note WICS comments on the profile of emissions reductions target setting methodology and we are happy to discuss this further at an appropriate time.

The operational CFP reports the greenhouse gas emissions associated with the day-to-day delivery of water and wastewater services. This includes regulated services delivered on Scottish Water's behalf through the PFI concessions.

Carbon is expressed as "tonnes Carbon Dioxide equivalents" (tCO₂e), which includes non-CO₂ emissions (e.g. methane and nitrous oxide from wastewater treatment). The information in the tables provides a detailed breakdown of operational carbon emission data and renewable energy generation.

With respect to emissions on Scottish Water's landholdings, AR22 reported the breakdown of the types of landholdings owned by Scottish Water and noted that work was ongoing to finalise the baseline carbon inventory. In AR23 the carbon status of these landholdings was reported for the first time. In line with our continued improvement in this area, in AR25 Scottish Water reported the updated land carbon inventory prepared by the James Hutton Institute using new survey data, national data sets, updated methods and codes to inform the carbon inventory.

Key changes within the AR25 update were the improved understanding of woodland and peatland areas, condition and extent, and an adjustment to some of the emission factors to reflect updates to standards such as the Peatland Code. Where appropriate, field data from survey work displaced top down national data sets and general assumptions used in the baseline assessment. This saw a significant reduction in peatland losses of carbon, reduced carbon capture in woodland, and a reduced range in the estimates.

AR26 reports the same land carbon inventory as AR25, namely the external assessment of the carbon status of Scottish Water's landholdings. This differs from AR24, where Scottish Water sought to estimate the expected changes arising from peatland work. Having reviewed and updated the baseline with external experts, it is not appropriate for Scottish Water to make its own estimates of the change during the interim years.

Due to continued developments in carbon reporting, AR25 also saw a change to the lines in the C0 table, which replaced previous (**Lines C0.10-C0.13**). This is replaced by 'Carbon emissions from the capital investment programme' (**Line C0.10**). There was an increase in this line for AR26 which will be explained in Table C2.

The line titled 'Net Zero Emissions' (**Line C0.11**) was reported for the first time in AR25 and is the sum of net operational emissions and capital investment emissions.

Tables C2, C3 and C4 were audited by Binnies. Table C1 is based on the Carbon Accounting Workbook Scottish Water uses to assess emissions and was audited by Achilles in line with ISO14064, as described in the commentary for Table C1.

There was a small correction to be made to AR25. An underreporting of the AR25 population figures used to calculate process emissions was detected, affecting operational emissions in AR25. This led to a slight under-estimate of process emissions from wastewater. Table 1 below shows how that change would affect the values reported in table C0 for AR25. This applies only to the reported carbon footprint of Scottish Water. There was no impact on AOIP (Annual Outperformance Incentive Plan) reporting and more detail on this can be found in the overview section of table C1. The values in the 24/25 sections of AR26 have been updated to reflect this change.

Line			Original AR25 Value	Corrected Population AR25 Value
C0.2	Change in scope 1 to 3 emissions in the report year	tCO2e	-4495	-1715
C0.4	Net operational emissions in report year (closing)	tCO2e	220434	223214
C0.9	Net operational emissions net of inseting and offsetting (closing)	tCO2e	220084	222864
C0.11	Net Zero Emissions	tCO2e	325479	328259

Table 1: Proposed changes to AR25

1.2 Performance Trends

1.2.1 Lines C0.1-C0.4 – Operational Emissions

These lines refer to information detailed in C1 tables.

C0.1 Net operational emissions in previous year (opening)

Reported as 223,216 tCO₂e, taken from AR26 tables **Line C1.29**. This differs slightly from the figure originally reported as 220,434 tCO₂e, which was subject to an error as described above. Due to rounding in the table as all figures are entered as integers.

C0.2 Change in Scope 1 to 3 emissions in the report year

Reported as -16,827 tCO₂e. All elements associated with operational emissions are detailed in **Lines C1.1-C1.29**. Changes for each scope are detailed in the memo **Lines C1.37-C1.39**.

C0.3 Change in renewable electricity generated and exported in the year

Reported as 856 tCO₂e, as calculated from **Lines C1.41-C1.43**. Whilst this shows a significant reduction in carbon benefits over AR25 (-4,421 tCO₂e), Scottish Water has maintained a high level of REGO (Renewable Energy Guarantees of Origin) accredited electricity exports. More information on that is in **Line C3.2a** to **Line C3.2c**. The reduction in carbon benefits is due to the reduction in the UK grid generation emission factor.

C0.4 Net operational emissions in reporting year (closing)

Reported as 207,243 tCO₂e, as presented in **Line C1.29**. This is a 7% decrease from AR25. The main source of this fall is the reduction in UK electricity grid generation factor, leading to a notable decrease in Scope 2 emissions. There has also been a reduction in Scope 1 emissions due to reduction in fossil fuel usage, and a minor reduction in Scope 3 emissions. Further information on this is detailed in C1 commentary.

Net operational emissions refer to emissions arising from the day-to-day operation of Scottish Water and includes emissions from the regulated water and wastewater operations, including Private Finance Initiatives (PFI), but not from the wider Scottish Water Group. Emissions sources include direct emissions from burning of fossil fuels on sites and in vehicles (scope 1), direct emissions in the form of nitrous oxide and methane from wastewater and bioresource (also known as sludge) treatment (scope 1), indirect emissions from consumption of grid electricity (scope 2), indirect emissions from outsourced activities and business travel (scope 3).

The term “net emissions” refers to the resultant emissions following netting off of the emissions benefit associated with exports of renewable electricity to the grid. Emissions are calculated and reported using the Carbon Accounting Workbook (CAW), a standard tool for the UK Water Industry. Lines C1.5 to C1.8 split out the tCO₂e into each of the main

greenhouse gases (GHG): carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). The table is split according to “emissions scopes” in line with Global GHG reporting protocols (see descriptions in Section 2.2, Performance Trends, below).

The Global Warming Potential (GWP) accounts for the different potential each GHG has for global warming. Carbon dioxide is given a GWP of 1 and all other gases are compared against this. This metric allows for the comparison of the impacts of different gases on global warming and is essential for calculating the carbon dioxide equivalent (tCO₂e) of emissions. The GWP of gases reported in AR26 has not changed since the last Carbon Accounting Workbook (CAWv19), allowing for direct comparison between AR26 and AR25 data.

Extending Scottish Water's Reporting Boundary - Chemicals

The Scottish Government's 2026 Statutory Guidance to public bodies on meeting the Climate Change Duty seeks for public bodies to increasingly report supply chain emissions. To date, Scottish Water's focus has been on the embodied emissions within the capital investment programme, but from 2025-26 it will also report the emissions arising from the purchase of chemicals for water and wastewater treatment as part of its carbon footprint boundary.

This is outwith the scope of AR26 reporting and is explained further in section C1 and will be reported as part of the footprint published within the Annual Performance and Prospects Report. As a new reporting element we anticipate it will take several years for this to become a stable measure, but its assessment enables Scottish Water to begin to focus on potential mitigation actions.

The emissions reported in the Performance and Prospects report is rounded to the nearest kiloton, meaning Scottish Water will report 207,000 tCO₂e for 2025-26 when comparing to the emissions reported in 2024-25 on a like for like basis, and 226,000 tCO₂e to include the expanded operational boundary which now includes emissions from chemicals.

1.2.2 Lines C0.5-C0.7 Emissions from landholdings

As described in previous Annual Returns, the initial baseline carbon inventory of carbon losses and gains across Scottish Water's landholdings was carried out by the James Hutton Institute (JHI) using national data sets and methods. The baseline inventory was created in 2022 and reported in AR23. Scottish Water undertakes inventory updates every 3 years owing to the specialist support needed to report these figures, as well as the time needed for land changes to become reportable. The first update to the baseline inventory was reported in AR25 and included additional site survey information allowing some of the national (top down) assessment data to be superseded. Scottish Water expects a progressive increase in site data in future updates.

During the intervening years Scottish Water will continue to report the latest land carbon inventory figures - i.e. in AR26, we report the same values as in AR25. Progress in land use change during the year such as woodland creation and peatland restoration is reported in hectareage delivered in year, but is not included in the carbon figures. As explained in C4.1-4.10 the approach to assessing the land carbon inventory is complex and requires external expertise to confirm the position. Moreover, woodland creation requires at least 5 years for it to become confirmed as established - hence woodland created during SR21 will begin to become represented in the land carbon inventory at the next update. The first 3-yearly update to the baseline inventory was completed to inform AR25 and will be updated again in AR28.

This remains an uncertain and developing area. It is important to note that the numbers reported in the Annual Return are the mid-point of a range of land-based carbon capture/emissions. The range reflects the level of uncertainty around land-based emissions and will improve as we gather greater understanding of our land.

In AR26 Scottish Water's landholdings continue to be reported as sequestering -350 tCO₂e per annum, reflecting the same value assessed externally by the JHI as AR25 (-350 tCO₂e per annum). Further detail of this is explained in the Table C4 lines.

It was noted in AR25 that Scottish Water removed from its land carbon inventory a 1,275 hectare section of woodland within its Loch Katrine estate that had in the past been planted as a forestry and carbon project with the carbon benefits being transferred to a third party. Whilst it remains within Scottish Water's landholding, the accounting rules for land carbon mean Scottish Water can no longer include the carbon to prevent double accounting. It may be appropriate to consider adding a further line to the Annual Return in future to report "total land carbon" which would include areas that presently are not included within the reported carbon inventory as used to assess net zero emissions goal, but remain part of Scottish Water's landbank.

1.2.3 Lines C0.8-C0.9 Net operational emissions net of inseting and offsetting (opening & closing)

These are the net positions, calculated from the net operational emissions and the landholding emissions for the opening and closing position lines in the C0 Table, using the same land carbon values as for AR25.

The outturn position in AR26 is that the net operational emissions (net of inseting and offsetting from the landbank) is 206,893 tCO₂e.

1.2.4 Line C0.10 Carbon emissions from the capital investment programme

This value is pulled forward from Line C2.3, where the calculation is explained in greater detail. The data reported comes from our automated Capital Carbon dashboard, which pulls together the data from nearly 12,000 projects, which has allowed improved accuracy and reduced time in the production of reports.

Scottish Water has continued developing tools that enable understanding and accounting for carbon within the current investment programme. The key focus in AR26 has been on the development of the carbon module for the cost estimating system, which has been developed further during 2025/26. These tools draw from UK water industry guidance and adopt known carbon factors for materials from standard sources such as the Bath University company Circular Ecology and their Inventory of Carbon and Energy database.

The tools have enabled Scottish Water to understand the current carbon intensity of investment, and to identify major sources of emissions within the capital programme. These tools have been adopted by our supply chain and enabled the identification of opportunities to reduce carbon intensity.

This remains a developing area and Scottish Water continues to improve the tools we use and their coverage within the programme. Positive moves towards adopting lower carbon solutions such as low carbon concrete and steel, offsite fabrication, the adoption of sustainable fuels and nature-based solutions are being seen in the supply chain.

1.2.5 C0.11 Net Zero Emissions

This is the overall net emissions, a sum of net operational emissions (net of inseting and offsetting, including land based emissions) and capital carbon emissions. For AR26 this is reported as 318,033 tCO₂e compared to 328,259 tCO₂e in AR25.

1.3 Investment

Emissions management is supported by a range of activities carried out across the business. Much is not directly connected to management approaches or specific investment needs for carbon but is delivered through changes in operational or investment delivery practices. For example - investment in data and systems such as the development of reporting for electric vehicles or creating embodied emissions functionality within costing systems. Similarly, promoting greener measures within capital investment projects (adoption of low emission fuels or use of low emission materials) would be integrated within projects.

1.4 Data

Greenhouse gas emission and energy data are reported for operational activities, capital investment and land-based emissions. Of these, electricity use and generation have the greatest level of confidence at A2, reflecting corporate energy data and billing systems. Operational emissions are C4 reflecting the wider range of data sources and methods of calculation, along with uncertainty in areas such as modelled process emissions.

Capital Investment emissions has a confidence grade of B4, consistent with AR25. We have begun our move to an automated corporate tool and have increased the size of the data set, however, we remain in a stage of refinement and improvement, so are not in the position to alter this currently.

Land based emissions are assigned C5, which reflects that the landholdings data are largely based on corporate GIS and national data sets to which assumptions and models are applied to assess greenhouse gas emissions/capture. Site survey information (mainly peatland and woodland) was applied to some of the landbank for the update reported in AR25 to displace national data sets, but the range remains wide and we will review the confidence grade at the next 3-yearly update.

A full overview of the data sources, methodology, assumptions, and confidence grades is covered in the Commentary for Tables C1 to C4.

See the corresponding table commentary for details of data improvement programmes.

2 Table C1 – Operational emissions

2.1 Overview

All figures within this table refer to the measurement of the annual operational Greenhouse Gas (GHG) emissions of the regulated business (Scottish Water operated sites, and PFI sites). Unless otherwise stated, it does not include emissions from the wider (non-regulated) Scottish Water Group. Emissions are reported in line with Global, UK, and Scottish reporting protocols and guidance, and calculated using UK Water Industry Research's Carbon Accounting Workbook (CAWv19 for Process Emissions and CAW20 for all other emissions sources) used by all UK water companies. This is updated annually to reflect the latest UK Government Department for Energy, Security and Net Zero (DESNZ) carbon conversion factors, boundaries, guidance, and methods. Prior to publication, Scottish Water's operational carbon footprint is audited externally by Achilles, carbon specialists, in accordance with ISO 14064-1.

Emissions are recorded as tonnes of carbon dioxide equivalent (tCO₂e) to account for the different potential each GHG has for global warming. Lines C1.5 to C1.8 split out the tCO₂e into each of the main GHGs: carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). The table is split according to "emissions scopes" in line with Global GHG reporting protocols (see descriptions in Section 2.2, Performance Trends, below).

The Global Warming Potential (GWP) accounts for the different potential each GHG has for global warming. Carbon dioxide is given a GWP of 1 and all other gases are compared against this. This metric allows for the comparison of the impacts of different gases on global warming and is essential for calculating the carbon dioxide equivalent (tCO₂e) of emissions.

In terms of Reporting for AR26, the GWP of gases has not changed since the last Carbon Accounting Workbook (CAWv19). Additionally, within AR26 we report the same boundary as in AR25, allowing for direct comparison between AR26 and AR25 data. There has, however, been a fall in the carbon intensity of grid electricity.

AR26 Performance

In AR26, we report the net operational Carbon Footprint (CFP) for water and wastewater services in AR26 as 207,243 tCO₂e reported in **Line C1.29**. This is a decrease of 7% from the AR25 submitted figure of 223,214 tCO₂e.

A key element of this fall in emissions is the reduction in greenhouse gas intensity of grid electricity compared with AR25, which masked an increase in the overall grid electricity consumption (largely driven by increased pumping during drought conditions).

There was a decrease in direct emissions from burning fossil fuels (Scope 1), lowering from 4,937 tCO₂e in AR25 to 2,786 tCO₂e in AR26. This reduction is mainly attributed to a lower demand of diesel for emergencies and power outages, an increase in the use of HVO

(Hydrotreated Vegetable Oil), and an improvement in efficiency in usage of fuel for bioresource treatment.

The process and fugitive emissions show a broadly stable position, with a slight decrease from 25,566 tCO₂e in AR25 to 24,342.533 tCO₂e.

Due to an error in population equivalent described earlier in section 1.1, AR25 values required updating as detailed in Table 2 below. The table below compares the data reported last year with the revised figures following recalculation of the carbon footprint using updated population equivalents. The change is an increase of 2,780 tCO₂e in the net wastewater operational footprint (C1.29) for AR25, arising from an adjustment to C1.7 Scope 1 emissions - N₂O and C1.25 Scope 3 emissions - N₂O. These values have since been corrected within the full C tables.

Line			Original AR25 Value	Corrected Population AR25 Value
C1.2	Process and fugitive emissions	tCO ₂ e	23813	25566
C1.4	Total scope 1 emissions	tCO ₂ e	40011	41764
C1.7	Scope 1 emissions - N ₂ O	tCO ₂ e	18048	19802
C1.18a	Outsourced activities - PFI outside of the Scottish Water Group	tCO ₂ e	79612	80638
C1.22	Total scope 3 emissions	tCO ₂ e	92803	93829
C1.25	Scope 3 emissions - N ₂ O	tCO ₂ e	18069	19095
C1.27	Gross operational emissions (scope 1, 2 and 3)	tCO ₂ e	224855	227635
C1.29	Total net operational emissions WATER	tCO ₂ e	52390	53561
C1.29	Total net operational emissions WASTEWATER	tCO ₂ e	168044	170339
C1.29	Total net operational emissions TOTAL	tCO ₂ e	220434	223214
C1.34	Percentage reduction from 2006/07 baseline (gross)	%	51%	51%
C1.35	Percentage reduction from 2006/07 baseline (net)	%	52%	52%
C1.37	Change in scope 1 emissions in the report year	tCO ₂ e	191	1944
C1.39	Change in scope 3 emissions in the report year	tCO ₂ e	939	1965
C1.40	Gross operational emissions in the report year	tCO ₂ e	224857	227637

Table 2: corrected AR25 reported emissions associated with process emissions

When comparing the corrected figure of AR25 Process and fugitive emissions with the AR26 figure of 24,342.533 tCO₂e it still maintains the trend of a stable position, and the overall net operational emissions show a fall from the AR25 adjusted C1.29 value of 223,214 tCO₂e to 207,243 tCO₂e in AR26.

Wider Changes - External Reported Carbon Footprint

Separate to AR26, there has been a change to the way in which emissions from wastewater are reported in the UK Greenhouse Gas Inventory (UKGHG). For the 2026 inventory they apply updated estimates for Nitrous Oxide (N₂O) emissions, informed by earlier updates by the Intergovernmental Panel on Climate Change (IPCC). Based on academic study these increase the assumed level of conversion of nitrogenous waste into nitrous oxide during wastewater treatment. This will in turn significantly increase the estimated emissions associated with wastewater treatment, where estimates are based on population equivalent rather than being monitored (as for the UKWIR Carbon Accounting Workbook).

The workbook is being updated to accommodate these changes and Scottish Water will incorporate into future reporting, starting in AR27, and for the 2026-27 operational footprint, which will see an increase in estimated process emissions. Scottish Water's intentions for SR27 and beyond to move towards more monitored emissions (away from estimates based on population equivalent), measures to better control their production, and technologies that reduce emissions will be key in mitigating this impact.

Additionally, Scottish Water has increased the scope of its operational carbon footprint beyond the current boundary to include emissions associated with chemical use. This is in keeping with the Scottish Government's expectations as set out in its Statutory Guidance to Public Bodies on meeting the duties under Scotland's Climate Change Act. This seeks for public bodies to expand reporting of "Scope 3 supply chain emissions". We have included the emissions from chemicals in Scottish Water's 2025-26 Performance and Prospects Report.

AR26 reported operational emissions will therefore differ from the operational footprint reported in Scottish Water's 2025-26 Performance and Prospects Report. Scottish Water's reported net Carbon Footprint for 2025-26 (CFP) is 226,000 tCO₂e, which includes 18,945 tonnes associated with chemical usage across Scottish Water and PFI operators. Without a dedicated line in table C1 Scottish Water been unable to include it within the AR26 report, and would suggest an amendment for AR27.

2.2 Performance Trends

2.2.1 Lines C1.1-C1.8 Scope 1 Emissions

Scope 1 refers to emissions arising directly from the burning of fossil fuels or other direct release of GHGs such as CH₄ or N₂O.

Line C1.1 Direct emissions from burning fossil fuels (including CHP generated on site)

This covers all activities that release emissions from fossil fuels in the course of delivering water and wastewater services, including natural gas used in heating, diesel and other fuels used in generators on site. This is reported as tCO₂e and has decreased from 4,937 tCO₂e in AR25 to 2,786 in AR26. These emissions can vary heavily depending on operational practices and in-year demands (e.g. standby generator use). As mentioned in the overview, several factors contribute to this reduction: lower demand of diesel for emergencies and power outages, an increase in the use of HVO as a substitute of diesel, and an improvement in efficiency in usage of fuel for bioresource treatment.

The increased use of HVO has delivered a saving of over 500 tCO₂e in the current year. Whilst year-to-year variability is expected to continue due to operational requirements, it is expected that total emissions will trend downward as HVO adoption increases.

Line C1.2 Process and fugitive emissions

The reported emissions for AR26 are 24,343 tCO₂e, showing a slight decrease from the 25,566 tCO₂e reported in AR25. It represents a modest fall and a broadly stable position. These emissions consist of direct release of GHGs such as CH₄ and N₂O from the natural processes of wastewater and bioresource (also known as sludge) management.

They are estimated based on the quantity of bioresource processed and the Population Equivalent (PE) of WwTWs using the agreed methodology set in the UK Water Sector's Carbon Accounting Workbook.

C1.3 Transport: company owned and leased vehicles

Reported as 11,011 tCO₂e for AR26, a small decrease from the 11,261 tCO₂e reported for AR25.

This includes emissions from Scottish Water-owned fleet and long-term leased vehicles. It does not include emissions from business travel in private vehicles, which is included under Scope 3. The ongoing transition of the van fleet to electric vehicles, alongside increased uptake of HVO as a diesel substitute, is reducing this line and is expected to continue trending down.

C1.4 Total scope 1 emissions

Reported as 38,140 tCO₂e for AR26, decreasing slightly from 41,764 tCO₂e for AR25. This presents the total Scope 1 emissions (a sum of Lines C1.1, C1.2 and C1.3), which comprises all emissions released directly from Scottish Water assets (including vehicles). The reduction in fuel use (C1.1) and transport emissions from company vehicles (C1.3) is balanced by an increase in process emissions (C1.2) yielding a slight reduction overall. Please refer to items C1.1 – C1.3 for detailed explanations.

2.2.2 Lines C1.5-C1.8 break down Scope 1 emissions into their constituent GHGs – carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and other GHGs

Further detail will be provided for each line below. As noted each year, there is a discrepancy that cannot be reconciled between Line C1.4, where the total scope 1 emissions is 38,140 tCO₂e and the sum of the constituent GHGs in C1.5-C1.8 which totals as 38,106 tCO₂e (as detailed in Table 3). This difference is due to the UK Government DESNZ 2024 conversion factors (which are used in CAWv20) not having a breakdown of emissions by GHG for HVO, and so these emissions are only available in tCO₂e, detailed in Table 4. The discrepancy between the difference in Table 3 of 34 tCO₂, and the HVO value of 34.89 tCO₂, is due to rounding differences in C1 Table - with the entry being carried out in integers whilst the CAW output using up to five decimal places.

	tCO ₂ e
C1.4 Total scope 1 emissions	38,140
C1.5 Scope 1 emissions - CO ₂	13591
C1.6 Scope 1 emissions - CH ₄	5228.7198
C1.7 Scope 1 emissions - N ₂ O	19281
C1.8 Scope 1 emissions - other GHGs	5
Sum of C1.5-C1.8	38105.7198
Difference	34.28

Table 3: Total Scope 1 Emissions – Discrepancy attributed to DESNZ conversion factors

Items not included in constituent Scope 1 GHG breakdown (C1.5-C1.8)	tCO2e	Comments
HVO fuel consumption	34.89	The 2025 UK government DESNZ emission factor does not provide a breakdown for constituent GHGs.

Table 4: Items not included in constituent GHG breakdown

C1.5 Scope 1 emissions – CO₂

Reported as 13,590.664 tCO₂e for AR26, a reduction from 15,992 tCO₂e for AR25 (around 15%) attributed to the reduction in fossil fuel usage.

C1.6 Scope 1 emissions – CH₄

Reported as 5,228.7198 tCO₂e for AR26, decreasing from 5,962 tCO₂e for AR25.

Emissions from CH₄ have reduced (around 12%) due to a reduction of grit and screenings waste sent to composting and a reduction in volumes of bioresource digested.

C1.7 Scope 1 emissions – N₂O

Nitrous oxide (N₂O) from wastewater treatment is the largest contributor to Scope 1 emissions represents a small decrease from the reported 19,802.284 tCO₂e in AR25 to 19,281.2984 tCO₂e in AR26.

C1.8 Scope 1 emissions - other GHGs

Reported as 4.82965 tCO₂e for AR26, increasing from 3 tCO₂e reported for AR25. This represents refrigerant gas loss reported in servicing air conditioning units.

2.2.3 Lines C1.9-C1.16 Scope 2 emissions

Scope 2 refers to emissions associated with the purchase of electricity and specifically the generation of electricity within the national grid and other purchases. It is important to note that this does not include the carbon associated with the transmission and distribution of electricity across the grid, which is accounted for as a Scope 3 emission.

Note that in line with guidance from the Scottish Government, Scottish Water uses the location- based method for accounting, where emissions are reported based on where the electricity is generated and consumed. This means we use the standard UK grid emission factor for calculating emissions. Some water companies in the rest of the UK may report their emissions using the market-based method, which allows grid electricity purchase to be reported as zero emissions when green tariffs are in place.

C1.9 Purchased Electricity

Reported as 81,117 tCO₂e for AR26, decreasing from 91,838.73 tCO₂e for AR25.

These emissions are associated with purchased electricity from the national grid and other sources. They are calculated from the annual electricity purchased and the DESNZ grid emissions factor. Grid electricity use comprises the major element of Scottish Water's carbon footprint.

Line C1.9 only covers Scottish Water operational electricity use (excluding electric vehicles), which represents 39.1% of the net carbon footprint. This line excludes both Scope 3 transmission and distribution losses and PFI electricity, which are reported within Scope 3, Line C1.20 and in part of Line C1.18a, respectively. With these two elements included, aggregate electricity emissions represent 49% of the carbon footprint, falling below 50% for the first time. In the Annual Performance and Prospects report all electricity is reported together regardless of Scottish Water or PFI use.

Scope 2 electricity consumption emissions have reduced by 12% since AR25. The reduction is associated to a reduction in the grid electricity factor, as electricity consumption itself increased owing to additional raw water abstraction because of drought conditions. Further details on electricity consumption are explained in Table C.3

C1.10 Electric vehicles

Reported as 74 tCO₂e for AR26, increasing from 61 tCO₂e for AR25.

This reflects the increase in electric vehicles (EVs) used in our leased fleet and private vehicles. It covers emissions from all electricity used to charge EVs outwith Scottish Water sites.

C1.11 Removal of electricity to charge electric vehicles at site

This line refers to the amount of electricity used to charge EVs at Scottish Water sites. The electricity used to charge EVs on site, reflected in Line C1.11, has been removed from the total Grid purchases (C1.9) to prevent double counting.

Whilst further improvements will be made, the project has identified 233 tCO₂e associated with charging EVs at Scottish Water sites in Line C1.11 in AR26, increasing from 143 tCO₂e in AR25, reflecting the increased use of EVs by Scottish Water.

C1.12 Total Scope 2 emissions

Reported as 81,424 tCO₂e for AR26, decreasing from 92,042 tCO₂e for AR25.

There has been a decrease in the total scope 2 emissions principally attributed to a reduction in the emission factor for UK grid purchased electricity, as the total consumption of grid electricity has increased (see Table C3).

2.2.4 Lines C1.13-C1.16 Breakdown of Scope 2 emissions into their constituent GHGs

C1.13 Scope 2 emissions – CO₂

Reported as 78,947 tCO₂e for AR26, decreasing from 89,464 tCO₂e for AR25. The CO₂e from purchased grid electricity is the main constituent of scope 2 emissions, and has reduced in the current period.

C1.14 Scope 2 emissions – CH₄

Reported as 1,931 tCO₂e for AR26, decreasing from 2,046 tCO₂e for AR25. The reduction in CH₄ is associated with a reduction in private wire electricity purchased from Noventa through CHP technologies, which is a source of CH₄.

C1.15 Scope 2 emissions – N₂O

Reported as 551 tCO₂e for AR26, a slight increase from 533 tCO₂e for AR25. This is driven by the increase in grid electricity grid consumption, as the N₂O constituent has not change despite the overall reduction in the emission factor.

C1.16 Scope 2 emissions - other GHGs

Reported as 0 tCO₂e for AR26, the same as AR25. There are no other constituent GHGs that make up scope 2 emissions.

2.2.5 Lines C1.17-C1.26 Scope 3 emissions

Scope 3 emissions refer to our indirect emissions from activities that are emitted by others on Scottish Water's behalf (e.g. public transport, outsourced activities).

C1.17 Business travel by public transport and private vehicles used for company business

Reported as 743 tCO₂e in AR26, a minor reduction from 769 tCO₂e in AR25. This is within expected year on year variation.

C1.18a Outsourced activities – PFI outside the Scottish Water group

Reported as 77,773 tCO₂e for AR26, a 3.5% reduction from 80,638 tCO₂e for AR25. This is a relatively stable position across PFI concessions.

C1.19 Outsourced activities – other

Reported as 3,327 tCO₂e for AR26, an increase from 3,259 tCO₂e for AR25. This consists of bioresource tankering carried out by third parties.

C1.20 Purchased electricity - transmission and distribution

Reported as 8,357 tCO₂e for AR26, increasing slightly from 7,971 tCO₂e for AR25. These are emissions associated with electricity lost in the electrical transmission and distribution system. The factor for transmission and distribution has seen little variation since AR25. The increase in total emissions is due to the increase in total grid electricity usage.

C1.21 Disposal of water and wastewater treatment waste to landfill

Reported as 1,044 tCO₂e in AR26, a reduction from 1,192 tCO₂e in AR25. This is within the variation expected from previous years (as shown in Table 5) and reflects quantity of waste to landfill on several islands where no recycling outlets are available.

Table 5: Disposal of water and wastewater treatment waste to landfill.

	AR26	AR25	AR24	AR23	AR22	AR21
Disposal of water and wastewater	1,044	1,192	1,084	864	1,123	1,214

Note that this is not a required part of Ofwat reporting by water companies in England & Wales but has been included in Scottish Water's operational carbon footprint for more than a decade.

C1.22 Total scope 3 emissions.

Reported as 91,244 tCO₂e for AR26, decreasing from the 93,829 tCO₂e reported in AR25.

The majority of this is made up of emissions from PFI operators acting on Scottish Water's behalf, as reported in Line **C1.18a**.

2.2.6 Lines C1.23-C1.26 break down Scope 3 emissions into their constituent GHGs

C1.23 Scope 3 emissions – CO₂

Reported as 58,807 tCO₂e for AR26, a reduction from 62,673 tCO₂e for AR25.

C1.24 Scope 3 emissions – CH4

Reported as 11,865 tCO₂e for AR26, decreasing slightly from 12,051 tCO₂e for AR25. This includes process emissions from PFI sites.

C1.25 Scope 3 emissions – N₂O

Reported as 20,554 tCO₂e for AR26, compared with 19,095 tCO₂e meaning there is a modest increase for AR26.

C1.26 Scope 3 emissions - other GHGs

Reported as 0 tCO₂e. As in previous years all GHG emissions are in the form of CO₂, CH₄ or N₂O, as reported in **Lines C1.23-1.25**.

As noted above, there is a slight different between the sum of Lines **C1.23-1.25** and the total Scope 3 emissions line C1.22. This is due to the HVO consumption, that is not broken down into constituent gases. Table 6 below shows the tCO₂e associated with HVO consumption in Scope 3. By adding this quantity to lines C1.23-1.25 we can match the total Scope 3 emissions in line C1.22.

Items not included in constituent Scope 3 GHG breakdown (C1.23-C1.25)	tCO ₂ e	Comments
HVO fuel consumption	19.08	The 2025 UK government DESNZ emission factor does not provide a breakdown for constituent GHGs.

Table 6: Items not included in constituent Scope 3 GHG breakdown (C1.23-1.25)

C1.27 Gross operational emissions (scope 1, 2 and 3)

Reported as 210,808 tCO₂e for AR26, decreasing from the 227,635 tCO₂e reported for AR25.

This is a sum of scope 1, 2 and 3 emissions. The decrease in scope 2 emissions from reduced grid electricity carbon intensity is the main contributor to this fall, with further modest decreases in scopes 1 & 3.

C1.28 Renewable Electricity Generated and Exported

Electricity generated but not used on site is exported to the grid where suitable connections are available. Where the generation meets the Renewable Energy Guarantee of Origin (REGO) criteria, this is converted to carbon credit and netted off against the overall operational carbon footprint.

Reported as -3,565 tCO₂e for AR26, decreasing from -4,421 tCO₂e for AR25. This decrease is not due to significant reduction in REGO exports, but due to the reduction in the UK Grid generation emission factor in turn means that exports do not provide as much carbon benefit as they previously did.

C1.29 Total net operational emissions

Reported as 207,243 tCO₂e for AR26, decreasing from the 223,214 tCO₂e reported in AR25. Net operational emissions combined the totals of Scopes 1, 2 and 3 (C1.27 gross operational emissions) minus the carbon credit associated with exported renewable electricity (**C1.28**).

Comparing the split of the current year versus the last year it is proportionally the same, approximately 24% for water and 76% for wastewater.

Net operational emissions are reported to the nearest kiloton (207,000) tCO₂e in the Performance and Prospects report, which will be 226,000 tCO₂e after including chemicals. The rounding formula is not included in the revised Water Industry for Scotland (WICS) template and therefore the figures held within the table may not exactly match the figures quoted in other publications containing this data.

2.2.7 Lines C1.30-C1.31 Ratio values

The carbon intensity of water and wastewater services are figures Scottish Water has calculated and published since 2006-07. The purpose is to provide information to customers on the carbon intensity of their service, and to enable interested organisations to calculate emissions embodied in the water they use. Intensity is expressed in tCO₂e per megalitre of water or wastewater service provided.

C1.30 Carbon Intensity, water (operational emissions)

Reported as 0.07 tCO₂e/MI of treated drinking water for AR26, a reduction from 0.08 tCO₂e/MI in AR25. This reduction reflects the overall reduction in emissions.

C1.31 Carbon Intensity, wastewater (operational emissions)

Reported as 0.17 tCO₂e/MI of wastewater for AR26, a decrease from 0.18 tCO₂e/MI in AR25. This reduction again reflects the overall reduction in emissions.

2.2.8 Lines C1.32-C1.35 Comparison to 2006-07 baseline

In AR26 the net operational footprint has reduced by 55.1% compared with the 2006-7 baseline of 462,000 tonnes.

2.2.9 Lines C1.36-C1.43 Memo lines

These are for comparison with the AR25 and commentary on key differences is contained in relevant lines above. These lines can be considered duplication since there is a "Previous Year" column in the AR template. Between line C1.27 and line C1.40 there is a difference of two units even though they both refer to same figure. This is because Line C1.40 is calculated based on the differences from the figures in the year prior, that are rounded to the nearest unit and lack the granularity to match the calculations perfectly. This discrepancy occurred in the AR25 submission as well.

The figure in **C1.27** is the more accurate one as the numbers conforming it are transferred directly from the UKWIR CAW (Carbon Accounting Workbook) with the accuracy necessary.

2.2.10 Lines C1.44-C1.45 Scottish Water Group

These lines refer to emissions from Scottish Water Group subsidiaries that are not included in the regulated operational footprint above.

C1.44 Scottish Water Horizons net operational emissions in report year

Reported as -814 tCO₂e for AR26, increasing from -805.82 tCO₂e for AR25. Even though the resulting carbon footprint is the same, there have been very strong operational differences between this year and last. Deerdykes has been sold, as were Stirling and Dalmarnock CHPs in the AR25 period. This has reduced the carbon footprint due to fuel consumption, and also reduced the carbon gains from renewable exports. But those two factors have compensated each other, leading to the overall carbon footprint being very similar in both years.

C1.45 Scottish Water Business Stream net operational emissions in report year

Reported as 81 tCO₂e for AR26, decreasing from 83.04 tCO₂e for AR25. This represents normal year-on-year variation.

2.3 Investment

During AR26, 4.51 GWh annual equivalent energy efficiency was delivered in wastewater and water through adoption of lower energy equipment and by the Exemplar Wastewater Treatment (further detail is contained in section 4.3, investment related to table C3 – Energy).

2.4 Data

2.4.1 Data sources and confidence grades

There are two main types of data involved in calculating the operational carbon footprint – consumption data from Scottish Water and emission conversion factors from the CAW. There are inherent uncertainties in both, that must be considered in assigning confidence grades. Consumption data is gathered from teams across the business from a variety of sources including meter readings, invoices, internal and regulatory reporting. Much of this is held in corporate systems and input follows an auditable process that is set out within Scottish Water's management system so can be assigned a high confidence grade. For example, electricity consumption (which is the largest single contributor to our footprint) is taken from verified meter readings, and fleet fuel usage is based on purchase information from vehicle fuel cards.

Some consumption data is not available in the correct units to allow a direct conversion into associated emissions and so some estimation is involved. For example, on site fuel consumption and travel on public transport are gathered in £ sterling. However, in order to be entered into the CAW, these need to be converted into litres of fuel and kilometres travelled respectively based on Scottish Water reference sites (on site fuel use), Department for Transport information etc., such entries will therefore be assigned a lower confidence grade.

Emission factors in the CAW are updated annually in line with latest UK Government DESNZ carbon conversion factors, boundaries, guidance and methods. The main uncertainty recognised by the water industry is with regards to process emissions from wastewater and bioresource treatment. Emissions are based on fixed factors applied to the population equivalent (PE) served and tonnes of bioresource treated. This does not take into account the varying nitrogen load of sewage entering the works, or the method of treatment or operation of the works. The water industry in the UK is collectively reviewing its methods around this and the methodology will continue to develop. This is reflected in the assigned confidence grade – i.e. Scottish Water is confident in the figure it is reporting but it may change if the methodology changes.

Going forward, due to the greening of the grid, Scottish Water expects electricity to make up a smaller proportion of our carbon footprint. As components become more or less significant, the confidence grade of the overall footprint may change.

2.4.2 Data improvement programmes

Annually, the operational carbon footprint of the regulated business is verified externally in line with ISO 14064-1 and informs continual improvement actions. Scottish Water is working with the wider water sector and through on-site monitoring programmes to better understand process emissions and how they may be accounted for in the future.

The water industry in the UK works collaboratively each year to review and improve the CAW, including footprint boundaries, emissions factors and methods of calculation.

2.4.3 Assumptions used for forecast data

The C1 Table does not include forecasts.

3 Table C2 – Investment emissions

3.1 Overview

The following section explains Scottish Water's approach to investment carbon, detailing the progress we have made to date, and sets out the data improvement we have put in place during the year.

Scottish Water has continued to make good progress in investment carbon reduction and has been developing new initiatives all of which are reducing investment carbon. However it has been challenging. The functionality of the tools we have been developing is still being improved, and need further work to refine the carbon reporting as we believe they are over-reporting the carbon intensity of some types of investment. Our capital carbon intensity measure suggests an increase in carbon intensity from 90.2tCO₂e/£m to 93.2tCO₂e/£m during the year. The main causes of this are two fold:

The tool for small value projects, the non-complex service delivery app (NCSD) continues to be developed and for a number of categories of projects has a default to a high infill figure for carbon where there are data gaps, leading to an overestimate of the carbon intensity of projects promoted through this tool. This issue will be described in more detail in section 3.1.1.

The development of the BES (Benchmark Estimating System) carbon module by external suppliers was not completed in sufficient time for Scottish Water to capture the full benefits of carbon reduction arising from our focus on material selection from materials in the year, this will be covered in section 3.1.2.

As a consequence, whilst Scottish Water continues to improve intelligence and processes, it is believed that the current reported figure is an over-estimate of the true figure.

However, Scottish Water is confident that its actions will have improved investment carbon intensity during the year, and below are noted some of the key actions that have actively reduced carbon during 2025/26. These are covered in more detail in Section 3.1.3.

- Continued expansion of HVO fuel used on sites – this has a direct and measurable benefit from displacement of fossil fuels.
- Avoidance of higher carbon concretes through work with the supply chain – as one of the major components of our capital carbon footprint, measures taken on concrete will support the carbon pathway.
- Recycled aggregate – displacing virgin purchased aggregates.

Scottish Water also initiated measures during this year that will support longer term carbon reduction in future years, including:

- Low carbon steel framework making use of electric arc furnace (EAF) steel.
- Advance Market Commitment for very low carbon concrete.
- Movement towards increased use of refurbished pumps and valves.

These are covered further in section 3.1.4.

3.1.1 Small value Non-complex service delivery APP (NCSD)

As described in the 2024/25 annual return commentary, there have been issues associated with carbon reporting within the Non-Complex Service Delivery App (NCSD), which covers large programme areas comprising simple relatively lower value projects, predominantly associated with maintenance programmes.

Where there is limited asset data the tool uses defaults to a carbon infill value based on expenditure rather than using observed carbon values relating to the items being purchased. This infill value account for approximately 70% of all projects that pass through NCSD and 71% by value.

When the default value is used it applies an estimated amount of carbon to a project based on the cost-carbon ratio, this is generally a higher figure than the projects that are costed using detailed data. The higher figure is a cautious estimate reflecting the unknown nature of the work. More granular assessments of the materials and activities would significantly reduce this carbon intensity. Work is continuing to improve the functionality of NCSD to enable more project specific reporting rather than applying carbon values based on cost.

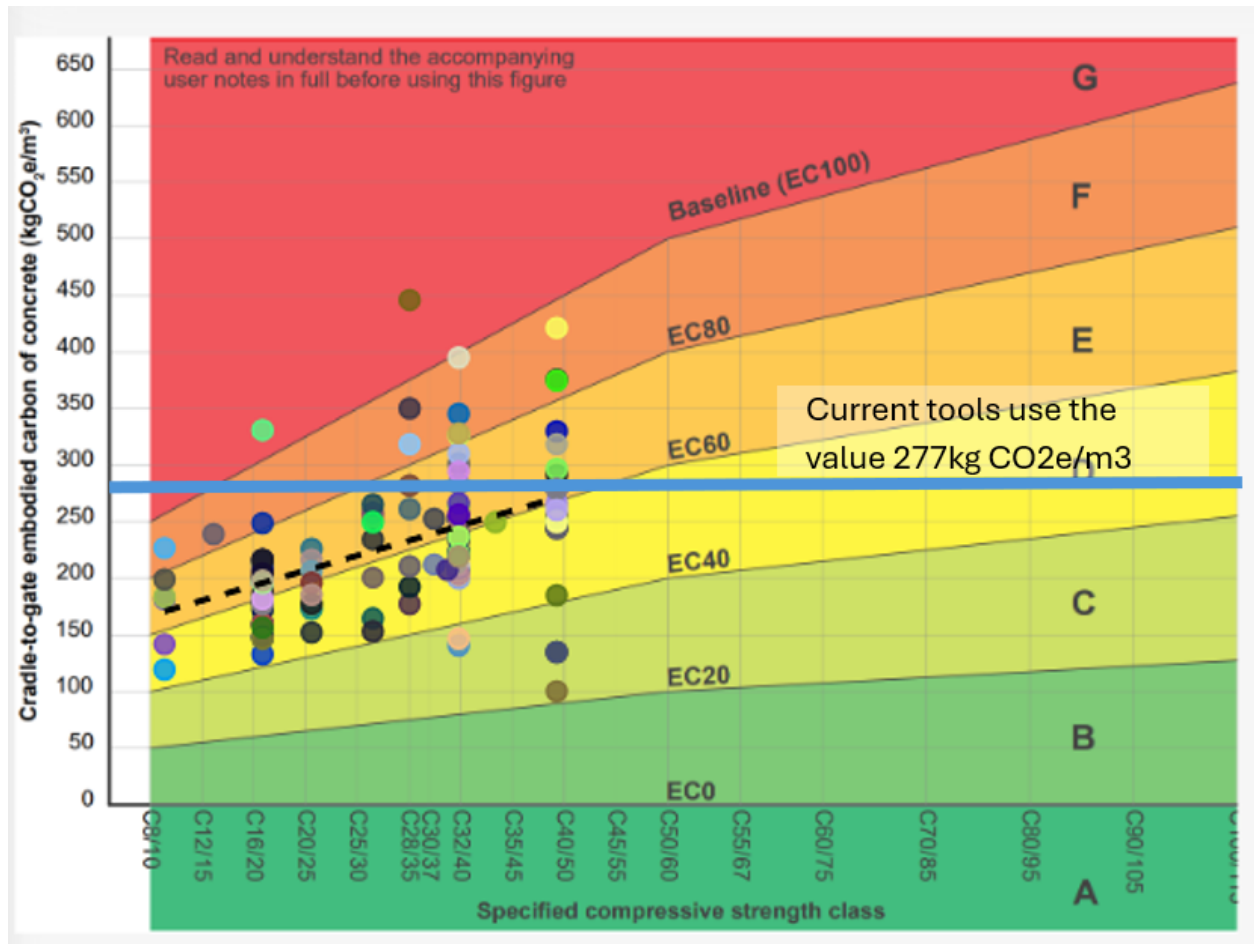
If Scottish Water were to exclude all the NCSD data from year end the position would have been 85.0tCO₂e/£m.

3.1.2 BES Carbon Module

It was expected that this tool would have been delivered during 2025/26, but owing to technical difficulties it has led to the delivery date being moved to be September/October 2026.

As a consequence the existing tools cannot yet report the benefits of the improvement measures delivered during the year, meaning that benefits associated with the purchase of lower carbon material, such as concrete, are not yet able to be reported.

Figure 1 : Carbon associated with Concrete purchased by Scottish Water



This inability to report benefit is highlighted by the output from the concrete dashboard which shows the carbon for each batch of concrete purchased. The current tools used by Scottish Water use a value of 277kgCO₂e/£m, which is shown by the blue line on the graph.

It can be seen that a majority of the observations are below the blue line, and that as a result Scottish Water is over reporting the carbon related to concrete in our investment programme. It is not possible to readily update existing tools, or to manually over-write the carbon values for concrete but the new BES tool will allow the input of differing values to be made.

3.1.3 Areas where progress has been made on carbon reduction

The following section outlines some of the key areas where progress has been made on carbon reduction during the year.

Diesel/HVO

Continued progress has been made on the use of HVO fuel on sites. This fuel is approximately 20% of the carbon of fossil-fuel derived diesel. In 2025/26 85% of the diesel type fuel used on construction sites was HVO, and we continue to progress adoption widely across the programme.

Lower carbon concrete

During the year there has been a continued push to ensure that lower carbon concretes are used during construction. Lower carbon concretes generally achieve the reduction through the removal of part of the ordinary Portland cement (OPC) and replace it with a substitute such as Ground Granulated Blast-furnace Slag (GGBS).

The development and implementation of the Lower Carbon Concrete Decision Matrix as a key procurement tool will support adoption of lower carbon concretes by Scottish Water and effectively prevent the use of high carbon CEM1 concrete unless the performance specifications require it.

The development of a carbon dashboard (extract shown in figure 1) will support the effective monitoring of concrete purchase and identification of areas for improvement. Together with ongoing work with concrete suppliers to ensure that lower carbon concrete is available and provided when requested by our delivery vehicles, this will be a key step in decarbonising this part of investment.

Recycled aggregate

The carbon associated with recycled aggregate is significantly lower than that of virgin quarried aggregate, and it has the additional benefit of adding to the circular economy and avoiding the destruction of the natural landscape. There were several steps undertaken during the year to allow the use of recycled aggregate:

- During the year a recycled aggregate framework was implemented which allows our supply chain to purchase approved recycled aggregate.
- The specification of aggregate used by Scottish Water was amended to allow the use of recycled aggregate
- Communication exercises were undertaken with our supply chain to set out when and how recycled aggregate can be used, and we will monitor progress in adoption to ensure changes are delivered.

3.1.4 Developments which will reduce carbon in future years

During the year a number of initiatives were undertaken that will start to produce carbon reductions in future years.

Low carbon steel framework

A new procurement framework was developed to allow the purchase of low carbon steel. Low carbon steel is generally produced in an electric arc furnace (EAF) rather than traditional blast furnace. The framework covers structural steel in the first instance. Reinforcement bar for concrete is also expected to draw from low carbon sources but is not currently included in the framework. Scottish Water expects to see the benefit of the framework once steel starts to be purchased through this route in 2026/27. They will be able to show the carbon changes arising from this approach once the BES carbon tool is operational.

Advance Market Commitment

Scottish Water became the first UK organisation to commit to buying a guaranteed amount of low carbon concrete over the next 5 years, which builds confidence in suppliers to invest in this technology. The commitment was made through Innovate UK and Carbon limiting Technologies and will see Scottish Water commit to purchasing at least 20,000 m³.

When these products are developed we will be in a position to purchase the materials and it should result in purchased concrete being significantly lower carbon than even the best GGBS substitute concretes. This is unlikely to impact the carbon in the next year, but is an exciting development and puts Scottish Water in a leading position for the use of significantly lower carbon concrete in SR27.

Refurbished pumps and valves

Scottish Water has identified the increased use of refurbished pumps and valves as a key strategic step in the investment carbon pathway. It aims to move towards a position where refurbished items become the preferred position, with the advantage of lowering embodied carbon as refurbishment of ferric heavy items avoids the need for casting of the main bodies, a significant part of the embodied carbon of this equipment.

Scottish Water is targeting a business as usual approach through business process re-engineering and behavioral changes, which impacts many parts of the business. A team has been established to develop the transition approach without risking an impact to operational performance.

3.2 Auditing

The C2 tables were audited externally by Binnies in AR26.

3.3 Performance Trends

As described elsewhere, whilst we consider that our embodied carbon performance has improved and reduced our carbon intensity during the year, we are unable to evidence this due to our tools not working as we would wish.

3.3.1 Lines C2.1-C2.3 Carbon intensity of investment

Line C2.1 Carbon intensity of investment

There has been no change in methodology of calculation from last year.

As described in the overview our capital carbon intensity measure indicates that there has been an increase in carbon from 90.2tCO₂e/£m to 93.2tCO₂e/£m during the year. Which is considered to be related to an over-estimate by our tools, rather than worsening of the actual position.

The project figures used in the reporting of the table C2 are based on the values at the gate 90 or 110 and are effectively frozen at that point in time. The carbon figures reported in Table G6 are latest best estimate and can be different from the data used to populate table C2.

Line C2.2 Capital expenditure (figure brought forwards from capital tables)

The total figure provided is taken from **Line G1.83**. The calculation is detailed below in Table 7:

		Water (£m)	Waste (£m)	Total (£m)
G1.66	Water	560.967		560.967
G1.67	Wastewater (combined)		461.605	461.605
	Percentage	55%	45%	
G1.70	General	71.452	58.796	130.248
G1.81	Water Reasonable Cost Contributions	12.455		12.455
G1.82	Wastewater Reasonable Cost Contributions		27.213	27.213
G1.83	Total Investment including Reasonable Cost Contributions	644.874	547.614	1192.488

Table 7: Capital expenditure breakdown

Line C2.3 Carbon Emissions from the Capital Investment Programme

This is the estimated for the total carbon footprint resulting from Investment activities and is calculated from intensity multiplied by the cost of the capital programme.

It is important to note that the total emissions from the investment programme is not a simple sum of the water and wastewater investment emissions. Scottish Water estimates the individual water and wastewater investment emissions by multiplying the in-year spend for each programme with the estimated carbon intensity for each programme (water and wastewater carbon intensity differs owing to the type of investment and material used). The total emissions for investment uses the overall carbon intensity for the capital programme and hence there will be a difference compared with a simple sum of the individual water and wastewater emissions. There are also some potential rounding errors across the intensity and spend values.

The total column is the figure that Scottish Water would recognise as the carbon emission resulting from investment activities, for 2025/26 the figures is 111,140t CO₂e.

This figure has increased from last year as a result of the intensity figure increasing and the investment expenditure also increasing

3.3.3 Lines C2.4-C2.7 Quadrant intensity figures

The quadrant figures are taken directly from the carbon dashboard and use the same method of calculation as described above.

3.4 Data

3.4.1 Data sources and confidence grades

Line C2.1 Carbon intensity of investment

There are a wide range of data-points within the sample set of over 10,000 projects, and a confidence range of B4 was applied as the current value plus/minus 25% appears to cover the uncertainty in the data.

When the new BES carbon management module is implemented, there will be two competing movements:

- There will be an initial upward push in the carbon intensity due to more detailed reporting and improved carbon data, which on a like for like basis shows higher carbon figures than the historical data.
- Once this is in place a downward pressure will also be visible as Scottish Water is then able to capture carbon savings associated with materials, for example lower carbon concrete as described in section 3.1.2.

Line C2.2 Capital Expenditure

Data supplied by capital investment team; data grade applied (A1) is the same as **Line G1.83**.

Line C2.3 Carbon emissions from the capital investment programme

This is a calculation based on the data above, the confidence grade (B4) reflects the confidence in **Line C2.1**

Lines C2.4-C2.7 Emissions by water/waste/infra/non-infra

These values are given the same confidence range at the top level figures of B4.

3.5 Future Data improvement programmes

3.5.1 Line C2.1 Carbon intensity of investment

Scottish Water expects to see a marked improvement in data quality and more importantly a better understanding of what the true drivers of carbon are in the construction side of the business, once the new BES tool becomes live.

3.5.2 Assumptions used for forecast data

The C2 Table does not include forecasts.

4 Table C3 - Energy

4.1 Overview

Table C3 provides information on electricity consumption, generation and export; and its associated financial information as well as other fossil fuels consumption. Scottish Water's operational electricity consumption comes from different sources. The predominant source is the national electricity grid, but we also use electricity generated by our own renewable schemes and 3rd Party combined heat & power plants (CHPs) connected to our assets via private wires.

The overall electricity consumption of the regulated business in 2025-26 had a slight increase of 4% compared to the previous year. This was mainly due to more raw water abstraction which was the result of dry weather and drought conditions that extended during the spring, summer and, for some parts of the country, even till autumn. However, the volume of renewable electricity generated by SW Regulated Business and SW Horizons hit a new high due to an improvement in performance of existing assets and the commissioning of new ones.

4.2 Performance Trends

4.2.1 Lines C3.1a-C3.1c and C3.2b Electricity Consumption

Scottish Water Regulated - Total consumption for regulated operations was 499.939GWh (from the grid, self-supplied and private wires) for AR26 showing an increase of 18.533GWh (+4%) compared to AR25. The increase was mainly driven by higher demand of pumping water assets.

Note that **Lines 3.1a, 3.1b, 3.1c and 3.2b** refer only to operational consumption of electricity, from each of the sources stated.

The predominant source of electricity consumed is the grid (450.990GWh) which was 14.723GWh higher than for AR25 (+3%). This was largely explained by increased raw water abstraction and water pumping assets driven by dry weather conditions that extended through the year. This resulted in significant water resource impacts across the country through late spring and into summer, with drought conditions persisting across many parts of eastern Scotland through the summer and into autumn, particularly in the Tayside area.

The volume in **Line C3.1c** reflects electricity purchased via Private Wire agreements from three Combined Heat and Power facilities (CHPs) owned by third parties. One is located on a farm adjacent to Girvan WWTW and generates renewable electricity from farm manure whereas the other two are natural gas fired CHPs and are located on Stirling and Dalmarnock WWTWs. The lower volume supplied via **Line C3.1c** (-0.773GWh) reflects an underperformance of the 2 CHPs at Stirling and Dalmarnock which faced operational challenges during the year.

PFI (Excluding those in Scottish Water Group)- Total electricity consumption for PFIs (**C3.1a**) saw a small increase from 125.176GWh in AR25 to 127.070GWh in AR26, which falls within normal year-on-year variability. Grid electricity consumption (**C3.1b**) has kept at steady levels with 100.850GWh in AR25 and 103.217GWh in AR26. Private wire consumption has not seen any remarkable changes.

Scottish Water Horizons - The total electricity consumption has lowered to 0.112GWh in AR26 from 1.290GWh in AR25. The main reason behind this was the sale of Deerdynes which was effective at the start of the current financial year.

4.2.2 Lines C3.2a-C3.2c On-site renewable electricity generated, used and exported

C3.2a – On site renewable electricity generated

This is presented disaggregated by the owners of the schemes: Scottish Water Regulated, PFIs and Scottish Water Horizons. The PFI schemes benefit only their own assets whereas the Horizons schemes are mostly embedded in Scottish Water regulated assets, contributing to

displacing grid consumption. Hence **Line C3.2b** - On-site renewable electricity used reflects the usage of renewable power by the Scottish Water Regulated assets regardless of ownership of the renewable scheme.

Scottish Water Regulated - The volume of renewable electricity self-supplied (**Line C3.2b**) for the use of regulated assets showed a variance of +4.583GWh thanks to an increase in the volume generated by the Group's renewable schemes.

As pointed out in previous years, the volume self-supplied does not match the difference between total generation (**Line C3.2a**) minus exports (**Line C3.2c**) for two reasons:

- The regulated sites also benefit from the volume supplied by renewable schemes owned by Scottish Water Horizons when these are located on regulated operational sites
- The hydro turbine at Daer WTW where, due to export connection constraints, 0.364GWh of the generation had to be diverted into heat dumps.

PFI (excluding those in Scottish Water Group) - Overall renewable generation from biogas CHPs at PFIs has seen a slight increase from 25.580GWh in AR25 to 25.825GWh in AR26.

Scottish Water Horizons - The total volume generated reduced from 19.701 GWh to 17.689 GWh. While there have been new renewable schemes rolled-out, they do not offset the generation that previously came from the Deerdykes facility (sold at the start of AR26).

Table 8 below shows the split of the renewable generation in AR26 by location and ownership.

Table 8: Split of the renewable generation in AR26 by location and ownership

Renewable Electricity Generation (line C3.2a) by Owner and Location					
		Location			
		SW Operational Asset	SW Horizons	PFI	TOTAL GWh
Owner	SW Reg	47.250			47.250
	SW Horizons	16.367	0.001	1.322	17.689
	PFI			25.825	25.825
	TOTAL GWh	63.617	0.001	27.147	90.764

C3.3 Renewable Electricity Capacity at end of year

Line C3.3 represents how much the existing renewable schemes could generate in a year as per the design output. It is not intended to express the capacity of the assets (usually expressed in MW) or the actual output in a given year, but rather how much the scheme is expected to generate in GWh based on its design and assumptions on operational conditions.

The source of this information varies. For older schemes it is based on historical output. For newer schemes it is based on the Acceptance Certificate (an internal document that shows the expected benefits of the project when delivered). For schemes owned by PFIs or third party-hosted on Scottish Water land, we rely on the information provided by these companies.

There was a net decrease of 7.375 GWh of capacity mainly due to the sale of the Deedykes facility (-8.200 GWh) and the decommissioning of Allanfean CHP (-2.280 GWh) and Saline hydro (-0.670 GWh). The CHP at Allanfean came back to SW ownership at the end of its life and considerable investment was required for repairs, making the CHP commercially unviable to operate. Saline hydro lost significant water resource after a permanent rezoning of water supply and became commercially unviable to run. Additionally, there was a small reduction (-0.160 GWh) to correct a historic misreporting. To partially offset this reduction, there were 15 new PV schemes commissioned (+3.935 GWh) of which 11 were delivered by SW Horizons and will benefit Scottish Water regulated assets.

C3.4 Percentage of 2030 Renewable Target Reached

Line C3.4 is a calculated figure that tracks progress against our 1320GWh target which has been based on our 2018-19 grid consumption. It compares **Line C3.3** in GWh to the 1320GWh objective. The current percentage achieved is 71.58% a slight reduction from 72.14% in AR25.

Table 9 below shows the split of the renewable capacity in AR26 by location and ownership:

Table 9: Split of the renewable capacity in AR26 by location and ownership

		Location					TOTAL GWh
		SW Operational Asset	SW Land	SW Horizons	PFI	3rd Party	
Owner	SW Reg	67.093					67.093
	SW Horizons	20.811			1.360		22.171
	PFI				23.000		23.000
	3rd Party		832.624				832.624
	TOTAL GWh	87.904	832.624	0.000	24.360	0.000	944.888

In AR26, the renewable capacity was 1.9 times the volume taken from the grid for operational regulated purposes.

4.2.3 Lines C3.5-C3.9 Renewable technologies

This section shows the volume of renewable electricity generated, split by technology and ownership.

Scottish Water Regulated - The largest contribution (60%) to on-site renewable generation in **Lines C3.5-C3.9** comes from hydro turbines (**Line C3.5**) and the total generation across **Lines C3.5-C3.9** showed a positive variance of 1.8GWh in AR26. This was down to an increase in solar PV generation coming from new schemes and better performance of existing ones. Conversely, there was a reduction in hydro and CHP generation. Hydro was impacted by less availability of water resources during an extended dry season whereas bioresource CHPs faced significant operational issues that reduced their output in year (Nigg CHP in particular).

PFI (excluding those in Scottish Water Group) - Overall renewable generation from biogas CHPs at PFIs has slightly increased from 25.580GWh in AR25 to 25.825GWh in AR26

Scottish Water Horizons – The main technology contributing to the total generation of 17.689 is solar PV, which contributes 17.432 GWh (compared to 14.309 GWh in AR25) . All but two of the solar PV schemes are embedded in Scottish Water regulated assets benefiting them (with the other two PVs located at PFI sites). The contribution of bioresources to the total renewable generation has dropped to nearly zero, due to the sale of Deerdykes at the start of AR26, which generated 5.1GWh in AR25. However, the increase in new renewable schemes has limited the drop in total renewable energy generation.

4.2.4 Lines C3.10a - C3.11b Other Fuels

C3.10a Fossil fuel consumption (transport by fleet owned and fleet leased by the organisation i.e. scope 1)

This line represents the liquid fossil fuel usage (diesel and petrol) from owned and leased fleet according to the boundaries outlined in the table. 'Scottish Water fleet' is only relevant for the Scottish Water regulated number.

Scottish Water Regulated - Reported as 4,273,641 litres of fuel for AR26, including both diesel (4,252,921) and petrol (20,720). This compares to 4,454,785 litres of diesel and 19,663 of petrol in AR25. The drop is explained by the increase in EVs in our Fleet (79 in AR25 and a further 24 in AR26) and the increase in usage of HVO as diesel alternative.

PFIs (Excluding those in Scottish Water Group) - Reported as 39,498 litres of fuel (with 219 litres being petrol and the remainder diesel) for AR26 compared to 205,147 litres of fuel in AR25. This sudden drop is explained by a change in reporting methods from our PFI partners. In previous years it included the fuel used for bioresource transport and disposal, whereas this year the fuel has been more correctly reported under bioresource processing emissions (they will fall under the line **C1.18a**). The current breakdown aligns with Scottish Water reporting in this line.

Scottish Water Horizons - The total fuel consumption was 8,521 litres diesel for AR26, an increase compared to 4,219 litres diesel for AR25. This is due to increased work in the north and north east of Scotland this year.

C3.10b Non-fossil fuel consumption by fleet (transport by fleet owned and fleet leased by the organisation i.e. scope 1)

This line was new in AR25 and represents the usage of non-fossil fuels (currently only HVO) in owned and leased fleet.

During AR26, Scottish Water Regulated and our PFIs at Veolia used 166,296 litres and 84,741 litres respectively. This compares to 14,384 litres in Scottish Water and 56,706 litres in PFIs during AR25. The increase is most noticeable in Scottish Water where there has been considerable effort to integrate HVO usage in our fleet.

C3.11a Other fuels (non-transport)

This includes fuels not used for transport, including natural gas for heating and on-site fuel use in generators. This is the equivalent of Line C1.1 but expressed in GWh rather than tCO₂e.

Scottish Water Regulated - Scottish Water Regulated - Reported as 40.627GWh for AR26, decreasing from 49.871GWh for AR25. This reduction is mainly driven by a decreased liquid fossil fuel usage. This is partly due to lower demand for emergencies, efficiencies improvements in fuel usage for bioresource treatment, and an increase in the usage of HVO for stand-by generators

PFIs (Excluding those in Scottish Water Group) Reported as 222.831GWh for AR26, decreasing from 228.314GWh for AR25. This is within normal year-on-year variability.

Scottish Water Horizons - Reported as 0.000GWh in AR26. The reduction from 17.424 GWh from AR25 is explained by the sale of Stirling and Dalmarnock CHPs in AR25 and the sale of Deerdykes which was effective at the beginning of AR26.

C3.11b Other non-fossil fuels (non-transport)

This currently comprises the use of HVO for any non-transport uses.

Scottish Water Regulated - In AR26 the energy values for non-fossil fuels used in Scottish Water is 1.882GWh which compares to 0.816GWh in AR25. It is expected that this number will continue to rise in following years as the use of HVO is embedded through the business.

PFIs (Excluding those in Scottish Water Group) - No HVO usage was reported outside of transport in AR25. This was due to the method of data aggregation. This year it is reported as 1.376GWh from Veolia as they are currently the only PFI partners using HVO.

Scottish Water Horizons - There is no non-fossil fuels in reported in the section for the present period.

4.2.5 Lines C3.12-14 Income received from energy exports and decarbonisation payments

All values presented have been extracted from our general ledger which captures costs at an account level. With the exception of Scottish Water Horizons, Line C3.12 is derived from amounts recorded as exported to grid. Line C3.13 is derived from amounts recorded as Renewable Obligation Certificates (ROC) and Feed in Tariffs (FIT) income.

Scottish Water Horizons, Line C3.12 has been populated using income recorded as sale of electricity and does not include the sale of electricity to the core business as this is included in line 3.17 detailed below.

Income from renewable electricity exported (line C3.12) in Scottish Water regulated decreased by £0.222m or 13% to £1.545m (2025: £1.767m). This has been mostly driven by a reduction in electricity generated and exported (as reported in lines C3.21 – C3.23).

Income from ROC and FITs (Line 3.13) in Scottish Water regulated decreased by £0.080m or 1% to £5.731m (2025: £5.811m). The main driver for the decrease has been lower renewable generation from hydro and bioresource technologies (as reported in lines C3.5 and C3.8).

Income from renewable electricity exported (line 3.12) in Scottish Water Horizons decreased £0.870m or 57% to £0.655m (2025: £1.525m). The decrease in the year relates mainly to the disposal of the Deerdykes AD facility in May 2025.

Electricity costs, recharges and hosting and export income have been extracted from our general ledger which captures costs at an account level. This data for PFIs is not available to us due to its commercially sensitive nature.

C3.15 Income from Hosting Renewable Electricity

The gross income received from our hosted renewables increased by £0.489m from £3.603m to £4.092m. The increase was explained by better performance at Clyde wind farm through a combination of higher market prices and more volume generated.

4.2.6 Lines C3.16-20 Electricity expenditure

All values presented have been extracted from our general ledger which captures costs at an account level. Line 3.16 is derived from charges from Optima and also includes Power Purchase Agreements charges and other non-optima charges. The value reported for gross expenditure is net of offset benefits.

Recharges of electricity expenditure represents the sale of renewable electricity from Scottish Water Horizons to the core business. This is also reported within the N Tables.

Total electricity expenditure (line C3.16) for Scottish Water regulated has increased £9.272m or 11% to £89.960m (2025: £80.688m). The increase in the year has been mainly driven by consumption increases (lines C3.1b).

Recharges of electricity expenditure in Scottish Water regulated have decreased £0.570m or 25% to £1.712m (2025: £2.282m). The decrease reflects the disposal of Scottish Water Horizons Heat from Sewage assets at Dalmarnock and Stirling to a third party in the prior year and the corresponding payment to Scottish Water to ensure that SW costs for electricity reflect market prices. At a group level the offset is shown on line C3.17 in the Scottish Water Horizons column.

During the year there has been no movement of income between companies in the Scottish Water group (line C3.19).

Electricity costs, recharges and hosting and export income have been extracted from our general ledger which captures costs at an account level. This data for PFIs is not available to us due to its commercially sensitive nature.

4.2.6 Memo Lines C3.21-23

These are for comparison with the AR25 and commentary on key differences is contained in relevant lines above. These lines can be considered duplication now that a "Previous Year" column has been added to the data tables.

4.3 Investment

To reduce emissions from electricity, Scottish Water is investing to improve energy efficiency and to increase renewable generation on its assets aligned with the Energy Efficiency Management Approach MA027. This prioritises projects based on positive NPV payback and will see Scottish Water replacing electrical equipment with more modern, energy efficient systems including pump variable speed drives, blowers, aerators, lighting and real time control technology.

Under MA101 – Renewable Energy Enhancement, Scottish Water has adopted a strategic approach with a hierarchy of options that start with the largest cost and carbon benefit (displacing grid electricity) to the least (no on site use, all generated power exported to grid) over the strategic review period 2021-2027.

In addition to investment of Tier 2 funds on renewables, Scottish Water Horizons are making investments on renewables. The renewables investment hierarchy provides guidance on what investment should be Tier 2 or Horizons funded.

4.4 Data

The data for electricity consumption, generation and export comes from meter recordings and invoices from our electricity supplier.

The vast majority of our electricity import supplies and renewable assets are fitted with smart meters that record and transmit data automatically. We have access to this data via a portal run by Scottish Power Dataserve (our meter operator).

The consumption and export data are also sent directly by Dataserve to our electricity supplier nPower for billing purposes and is subject to industry standard validation processes.

A small proportion of our import supplies are billed on estimated data when actuals are not available due to communication issues or lack of a manual meter reading and the estimation is done by our supplier following industry rules.

The meter data and the supplier's invoices feed our energy management system Optima from where we can obtain reports. Hence the degree of confidence in this data, as per WICS definitions, would be A2 (to allow for estimates).

The data relating to the "installed capacity at the end of year" comes from a mix of sources: historical records, internal documents and spreadsheets and information received from third parties; therefore, it has been graded B3.

The PFI consumption and generation data is gathered directly from each PFI company.

Electricity costs, recharges and hosting and export income have been extracted from our general ledger which captures costs at an account level. This data for PFIs is not available to us due to its commercially sensitive nature.

The data presented in Table C3 was audited by Binnies, with the exception of **Lines C.3.10 and C3.11** which were audited by Achilles. Achilles also audited the source data behind **Lines C3.1a to C3.9**.

4.4.1 Data improvement programmes

We continue to identify electricity supplies with analogue meters so that these can be replaced with smart meters capable of transmitting data automatically avoiding reliance on manual readings or estimates.

4.4.2 Assumptions used for forecast data

The C3 Table does not include forecasts.

5 Table C4 – Land and carbon inventory

5.1 Overview

Scottish Water's landholdings play a key role in our routemap to Net Zero, discharging our public body duty for biodiversity, and are increasingly needed to support wider service resilience to climate change. To manage this we need to understand land type, habitat cover, condition, where we are gaining carbon (e.g. in woodland) and where we are losing carbon (e.g. eroding peatland). A key focus in recent years has been the delivery of work to establish a land carbon inventory and biodiversity and natural capital baselines from which we can plan future management to support service and carbon outcomes.

Scottish Water owns over 23,000 hectares of land predominantly in water catchments, with a diverse mix of upland moorland, grassland, woodland and peatland in varying conditions. Around 13,000 hectares is under some form of lease or tenancy for agriculture (mainly grazing) with 9,500 under long term tenancy to Forestry and Land Scotland at Loch Katrine.

There are significant areas of woodland that are capturing carbon, with equally significant areas of peatland in a poor condition with carbon is being emitted. Scottish Water's focus is on understanding and reporting the 'net' position of land carbon - the balance between losses and gains.

Land Carbon Inventory Development

Owing to the specialist nature of land and carbon assessments, Scottish Water engaged the James Hutton Institute to develop an approach using established guidance and methods such as national and international standards, woodland and peatland carbon codes, and academic evidence for losses or gains across different land types.

The approach uses spatially explicit national land cover data; robust and referenced modelling approaches; and published emission factors. It considers land cover, soil type, peatland condition, climate, topography, and land management practices. It aligns with global and national principles for greenhouse gas accounting and was strengthened by engagement with external stakeholders including the Scottish Government, Scottish Forestry and NatureScot.

The inventory generally adopts a “top-down” approach using national data sets, augmented by field data where available - peatland condition surveys, woodland creation and condition data. Sources of uncertainty include the confirmed extent and condition of peatland, the age and species composition of woodland, and the management practices on moorland and grassland, and improving this is an ongoing activity. The carbon position is reported as a range reflecting the uncertainty around actual site condition when compared with the possible range in the national data sets. For the purposes of the Annual Return, a mid-range figure is reported in the data tables.

The scale and complexity associated with a full update to the land inventory means Scottish Water commissions updates to the land carbon status on a **3-yearly basis**. There is limited value in more frequent assessments owing to the multi-year time lag for land use changes to take effect and become reportable. For example, it takes 5 years for new woodland to become established and to be confirmed as "new woodland", and can take over 10 years for peatland to fully recover following restoration.

The 3-yearly updates run from the 2022 baseline inventory, first reported in AR23. The first update was undertaken in 2024-25 and reported in AR25. Each 3-yearly inventory update will review the emission factors or approaches to reflect latest guidance, include improvements to input data, mapping, site condition surveys etc, and confirm the extent to which work by Scottish Water on peatland and woodland in the preceding years can be fully integrated within the 3-yearly baseline.

Typical changes may cover:

- changes in national standards, methodologies or carbon factors
- improved intelligence (better land classification from survey and other data)
- changes in land cover (e.g. grassland to woodland)
- improvements (e.g. peatland restoration)
- improved intelligence from woodland surveys (updated age class and species mix used in analysis)
- losses - e.g. areas of woodland that have been sold, harvested or lost to wildfire

It is important to reflect potential losses because, unlike market-based schemes such as the Woodland Carbon Code where the risk of loss is built into the cost of the credit, within the inventory approach the loss of carbon assets must be accounted. If we lose carbon storing assets through events such as storm or fire damage it will impact our inventory and our net zero position.

It should be noted that the inventory assessment focuses principally on major landholdings. It excludes small areas of land associated with operational sites and assets, which were not part of the initial carbon assessment. As the baseline re-assessment work progresses through external experts every 3 years it is expected that it will progressively include more of the small land areas as they are assessed.

AR26 Land Carbon inventory and land changes

AR26 reported land carbon losses and gains are the same as reported for AR25 and based on the 2025 formal update to the land carbon inventory as reported by JHI.

Scottish Water's reported emissions position in AR26 therefore remains unchanged with a net carbon capture of -350 tonnes CO₂e per annum (mid-point of the ranges).

We do report changes in year arising from Scottish Water activity in terms of hectares of woodland creation, peatland restoration and natural regeneration achieving maturity etc. However these will not be reflected in the land carbon inventory until it is appropriate to include in a future formal update by external experts.

As noted in AR25 the carbon sequestration from the 1,275 hectares of woodland in the SFA area which formed part of the original baseline reported in AR23 remains part of Scottish Water's overall landbank, but at present is not included within Scottish Water's land carbon inventory.

5.2 Performance Trends

AR26 represents the fourth year of reported land information. AR23 reported the original land inventory baseline, and this was updated in AR25. AR26 reports the same updated baseline values showing Scottish Water land to be a weak carbon sink, with significantly more to do on peatland restoration and more woodland creation opportunity.

There has been a significant improvement in peatland emissions between the original baseline and the updated baseline reported in AR25.

Peatland restoration and Woodland Creation delivery has remained at a steady level in AR26 with 478 hectares of peatland restoration during the year (including 57Ha completed but not signed off in the previous year) and 250 hectares of new woodland in 2025-26. Whilst these deliver significant carbon gain they are not yet represented in the carbon inventory and will be formally reflected in the AR28 inventory update, along with other qualifying woodland and peatland work.

Line C4.1 Total area of peatland

The reported value of 4,960 hectares as determined by JHI is based on Scottish Water's major landholdings, mostly those under agricultural tenancies or grazing lets, and excludes small areas of land associated with operational sites and assets, which were not part of the initial carbon assessment.

For AR26, this area figure has not changed. Any updates will be made in AR28 as part of the planned three-yearly land and carbon inventory update, which will be independently verified.

In recent years, improved surveys have been carried out across several catchments, focusing on areas requiring restoration. These datasets informed the James Hutton Institute (JHI) assessment which was incorporated into the AR25 update and have been carried forward into AR26.

Further surveys are required in some areas to confirm peat extent, survey data will be included in the AR28 inventory update. Initial evidence suggests peatland may be less widespread, but additional soil analysis is needed. Ongoing surveys in other catchments will inform future restoration planning and reporting updates.

Line C4.2 Total area of woodland

The reported value of 3,860 hectares for AR26 remains unchanged from the 3,860 Ha reported in AR25. This approach reflects the agreed methodology that woodland extent is updated on a three-year cycle, with the next update scheduled for AR28.

This figure is based on our major landholdings, predominantly those under agricultural tenancies or grazing lets, and excludes smaller parcels of land associated with operational sites and assets, which were not included in the initial carbon assessment.

Changes in land area identified during the period, including both reductions and gains, will be incorporated as part of the three-yearly woodland extent update, with the next update scheduled for AR28. This update will include woodland established through planting and natural regeneration during the intervening period, once it has been surveyed, validated, and verified. Verification is undertaken in collaboration with research partners, including the James Hutton Institute, to ensure robust classification and consistency with the land carbon inventory methodology.

Recent survey work has identified additional woodland across Scottish Water's estate, primarily arising from natural regeneration, where trees have reached sufficient height and density to qualify for reclassification. These areas are typically at an earlier stage of carbon sequestration maturity, and therefore their contribution to carbon benefits will increase over time.

In line with the Woodland Carbon Code and the established inventory approach, newly created woodland is not reclassified within the carbon inventory until five years post-

establishment. This allows sufficient time for planting to establish successfully and provides confidence in reporting land cover change.

As such, the full impact of woodland creation activity under the SR21 programme, alongside newly verified naturally regenerated woodland, is expected to be reflected in the AR28 woodland area update.

Line C4.3 Total area of grassland

The reported value of 5,459 hectares is based on the major landholdings, mostly those under agricultural tenancies or grazing lets, and excludes those small areas of land associated with, for example, operational sites and assets, which were not part of the initial carbon assessment.

Some areas of grassland have been planted as woodland in AR25 and AR26. However Scottish Water will wait five years before representing this as an established land use change. Therefore new woodland creation (through planting) has not impacted grassland area in AR26. Grassland area updates will be reflected in the AR28 inventory update.

Natural Regeneration of new woodland has been claimed in areas previously identified as grassland and further areas reclassified as moorland (Line **C4.4** "other land cover types") through the latest JHI assessment.

Line C4.4 Total area of other land cover types

The reported value of 7,701 ha in AR26 has not changed from AR25 as this figure will next be updated in AR28 as part of the 3-yearly inventory update.

Other land is made up of Montane and Moorland areas, as well as Scottish Water's only arable farm. Aside from updating a policy position to prevent Muirburn (the burning of the heath and stubble on a moor) on tenanted moorland (which will come into force at the conclusion of an existing tenancy), Scottish Water has not yet sought to proactively intervene and change land types in this category however AR25 did show a reduction in Moorland due to a Loch Katrine woodland area that is claimed by a third party under the Scottish Forestry Alliance, and areas of moorland being reclassified as Regenerating Woodland (not yet brought into the formal woodland classification). This was updated in AR25 3-yearly. As this remains a developing area Scottish Water will further reconsider the land categorisation in line with the updated JHI inventory. The areas of Arable and Montane land remain unchanged.

Line C4.5 Total area of landholdings

The reported value of 21,980 Ha of total landholdings represents the area of land that is contributing to our carbon stocks (excluding SFA woodland areas at Loch Katrine) and flows for the carbon inventory. Scottish Water's total reported area of landholdings remains at 21,980 Ha and is the same as AR25.

It may be appropriate to create a further line in the AR to capture the position of this SFA area of land at Loch Katrine which takes the total land cover area to 23,219 Ha. It is not included as the emissions benefits from this land have been attributed to a 3rd party.

Line C4.6 CO₂e emissions from peatland in year

Peatland emissions reported in AR26 remain unchanged from AR25, at 16,900tCO₂e, within a range of 6,500 – 25,000 tCO₂e. This reflects the current approach of updating the peatland carbon inventory on a three-year cycle, with the next update due in AR28.

There was a reduction reported in AR25 was driven primarily by improved survey data, updated Peatland Carbon Code factors, and refinement of assumptions within the JHI Land Carbon Inventory. However, it is important to note that restoration activity delivered to date is not yet reflected in the inventory figures.

During the current reporting period, significant peatland restoration activity has taken place across the estate. These works will undergo post-restoration assessment and verification before being incorporated into the next inventory update.

As a result, future updates in AR28 are expected to reflect both improved site condition data arising from ongoing survey work and the benefits of restoration undertaken during SR21, providing a more comprehensive view of peatland emissions and abatement.

Line C4.7 CO₂e emissions from woodland in year

AR26 continues to report carbon capture from woodland of -24,000 tCO₂e per annum, the mid-point of a large range (-16,000 to -32,000 tCO₂e) developed as part of the 2025 3-yearly JHI inventory update.

The benefits from woodland creation in SR21 are not yet reflected in these figures - woodland needs to be established for 5 years before it can be integrated, and the benefits of SR21 woodland creation will begin to be represented in the next three yearly inventory update ahead of AR28.

Line C4.8 CO₂e emissions from grassland in year

The AR26 reported number of -6,450 tCO₂e is the mid-point from the range -8.0k to -4.9k, which has been retained from AR25 (-6,450 tCO₂e) as assessed by the JHI in the inventory update in AR25. Some areas of grassland have been planted as woodland in AR26 as in previous reports however as noted above, Scottish Water will wait five years before representing this as an established land use change with associated change in emissions.

As with peatland and woodland, the confidence grade for grassland is low due to the nature of the source data. It includes both improved grassland where there is carbon capture which sequesters within a range of -12k tCO₂e to -9.4k tCO₂e and upland unimproved grazing land where carbon is being lost within a range of 4k tCO₂e to 4.5k tCO₂e. It excludes the operational emissions of any land operator which are beyond the control of Scottish Water. Scottish Water will work with agricultural experts to better understand and manage these emissions in future years.

Line C4.9 CO₂e emissions from other land cover types in year

The reported number of 13,200 tCO₂e per annum emissions is the sum of other land types in the inventory prepared by JHI and is likewise the mid-point of the range given (12,800 to 13,600 tCO₂e). This figure remains unchanged from AR25 and will next be updated in AR28 as part of the 3-yearly inventory update.

Line C4.10 Total CO₂e emissions from landholdings in year

The reported value of -350 tCO₂e is the sum of Lines C4.6-C4.9. This figure is unchanged from AR25, as no further inventory update has been applied in AR26. This will be updated as part of our 3 yearly research partner led inventory update due in AR28.

Scottish Water will continue to undertake survey work to improve field data and reduce uncertainty, and to deliver further woodland creation and peatland restoration. AR28 will report the next formal update to the land carbon inventory, which will include the benefits from recent peatland restoration and qualifying (5 year+) woodland creation.

5.2.1 Lines C4.11-C4.19 Carbon sequestration – progress

Line C4.11 Peatland restored in year

This reports restoration on Scottish Water and 3rd Party land, and Line C4.11 reports 478 ha across 2 sites in AR26 compared with 555 ha in AR25.

420.69Ha was delivered during the AR26 reporting year, whilst a further 57.24 Ha was physically delivered at Loch Katrine during the AR25 reporting year, but owing to late season completion was not able to be mapped and signed off for the AR25 reporting window. The restoration in AR26 took place across two large scale projects on Scottish Water Sites: Loch Katrine and Lintrathen and Backwater. Whilst these were delivered in this period, we will not report these until the next inventory update due in AR28.

The area of restored peatland is reviewed and agreed with NatureScot as part of the reporting to the Scottish Government and associated Peatland Action grant funding.

For the purposes of Scottish Water's land carbon inventory, only emissions from Scottish Water peatland is included.

Line C4.12 Woodland created in year

Line C4.12 reports 250 ha of woodland creation and natural regeneration activity across the Scottish Water Estate in AR26. This is comprised of 214.55 ha of planted and enhanced woodland and 35.38 Ha of natural regeneration reaching the required height and density thresholds.

Of the planted and enhanced woodland, 67 ha of developing woodland acquired at Talla Water Woods was improved through thinning and replanting as it had failed to achieve the required woodland density intended in the original scheme. Improving, replanting, extending and bringing under active long-term woodland management will maximise the benefit of this area.

A further 73.55 ha was planted across 16 sites through the Woodland Creation Programme (WCP), along with 74 ha of newly planted woodland at Loch Katrine. In addition, 35.38 ha of natural regeneration met establishment criteria during the reporting period. This includes 32 ha at Loch Katrine and 3.38 ha of natural regeneration across three other Scottish Water sites.

As outlined in Line C4.2, new woodland will be added to the land carbon inventory as part of the 3 yearly inventory update once the woodland five years old and establishment is confirmed. AR28 is expected to be the first year that newly planted woodland in the early part of SR21 is included, and woodland created for AR26 will be captured in AR31 depending on success of the planting (only established woodland will be added to the inventory). Each year standard maintenance is applied to created woodland with annual inspections, maintenance and replacement of failed trees (this is known as 'beating up').

Line C4.13 Grassland restored and created in year

No grassland projects took place within the reporting year.

Line C4.14 Other land cover changes in year

No other land cover change projects took place within the reporting year.

Line C4.15 Total land area changed in year

During AR26, 728 ha of land cover change took place compared to 858 ha in AR25. (sum of **Lines C4.11- C4.14**).

Line C4.16 Peatland restored in year (forecast benefit in future years)

It is important to note that these forecast benefits are intended only to give a context for some of the carbon benefits that may be achieved through the work completed in year. They are not independent of the land carbon inventory and the 3-yearly updates to the inventory will be made without reference to these forecasts - they will use the base data on land cover change and condition to estimate the land carbon position for the year in which the assessment is made. The value reported here is the potential annual benefit we might expect for the activity. This does not mean we expect flat, continuous profile into the future – condition and full recovery require ongoing management. We would recommend re-considering the value of this line as it cannot be reconciled with the formal inventory updates and risks some confusion.

The reported figure of -3,778 tCO₂e represents expected average annual carbon benefit arising from the restoration activity. It is estimated from the Peatland Carbon Code Version 2 and the expected improvement in emissions for degraded peat before and after restoration. The Peatland Code sets specific tCO₂e per hectare benefits for movement between peatland condition classes. As there may be several different condition classes within any peatland area, Scottish Water applies an average condition improvement factor based on the condition classes, weighted for the areas of each condition class. The weighted average calculates the average difference between degraded peat prior to restoration and expected post-restoration condition of peat, across a number of Scottish Water sites. This is then multiplied by the number of hectares restored.

Monitoring in future years will provide more data on actual condition and progress of the restoration work which in inform the AR28 3-yearly inventory update.

C4.17 Woodland created in year (forecast benefit in future years)

It is important to note that these forecast benefits are intended only to give a context for some of the carbon benefits that may be achieved through the work completed in year. They are not independent of the land carbon inventory and the 3-yearly updates to the inventory will be made without reference to these forecasts - they will use the base data on land cover change and condition to estimate the land carbon position for the year in which the assessment is made. The value reported here is the potential annual average benefit we might expect for the activity across 60 years. This does not mean we expect flat, continuous profile into the future – woodland is very slow to capture carbon in the early years, accelerates rapidly from 5-25 years and declines slowly thereafter. We would recommend re-considering the value of this line as it cannot be reconciled with the formal inventory updates and risks some confusion.

The reported figure of -2,175 tCO₂e is an estimated average annual benefit figure. It represents the average annual carbon benefit over 60 years of the planted trees. Over their life, trees will have negligible carbon capture in the first 5 years, rising rapidly to >20 tonnes per hectare for the 15-30 year age, before falling back. The average annual benefit is calculated by multiplying the number of hectares planted by the average annual (over 60 year) sequestration rate for the type of woodland created (based on species, yield class and planting density).

This is a forecast benefit and we would further note that sequestration from new woodland is not counted in the land carbon inventory for the first five years. As described in **Lines C4.2 and C4.12**, this aligns with the Woodland Carbon Code and allows sufficient time to enable the planting to become established and for us to confidently report the sequestration associated with the new land cover type.

As for peatland, monitoring in future years will confirm the actual position of the woodland and we would expect woodland created in AR26 to be reported in the inventory update in AR31 at the earliest.

C4.18 Grassland restored and created in year (forecast benefit in future years)

There has been no activity focussed on grassland during AR26.

C4.19 Other land cover (forecast benefit in future years)

There has been no activity focussed on other land use during AR26.

5.2.2 Lines C4.20-C4.24 Expenditure

Line C4.20 Expenditure on peatland restoration in year

The expenditure figure of £2,627k comprises contractor costs for physical restoration works, associated overheads, surveys, and feasibility activities.

As with previous years, this figure should not be used to calculate £/ha or £/tCO₂e avoided, as costs incurred in-year are not always directly related to restoration activity delivered within the same year.

The reported expenditure includes scoping, feasibility assessments, and condition surveys across a number of peatland restoration areas. These activities inform future restoration delivery and may relate to sites where full, partial, or no restoration will take place in subsequent years. Additionally, materials purchased in one year may be deployed in future years.

In 2025/26, expenditure reflects activity across the following peatland restoration projects:

- North Region (£122,688):
 - Scoping, feasibility, and early-stage restoration planning across northern sites
- East Region (£1,393,978):
 - Significant programme of surveys, design, and preparation for future restoration delivery
- Loch Katrine (£930,583):
 - Combination of survey, design, and initial restoration works
- South (Camps and Fruid) (£55,261):
 - Early-stage feasibility and scoping work
- Shetland (Multiple Sites 2025) (£124,161)
 - Ongoing work including surveys, design, and restoration activity across multiple locations

C4.21 Expenditure on forestry creation in year

Expenditure of £4,531k includes all costs associated with woodland creation activities, including screening, surveys, site preparation (e.g. road construction, fencing, and ground preparation), planting, and associated programme overheads.

As in previous years, this figure should not be used to derive unit costs such as £/ha or £/tCO₂e abated. Expenditure incurred within a given year does not directly correspond to delivery achieved in that same period. For example, costs include:

- Screening, appraisal and legal work for a wide range of potential woodland sites, many of which do not ultimately progress to planting
- Surveys, design work, and third-party input for sites planned for delivery, regardless of whether they proceed within the reporting year
- Early-stage surveys and development for future projects, recognising that larger woodland schemes typically require 2–3 years of planning and assessment prior to implementation
- Advance purchase of materials or mobilisation costs that may be utilised in subsequent years

Expenditure Breakdown:

- Loch Katrine – £2,150k. Seed island establishment, fencing, deer control, and Forestry and Land Scotland (FLS) staff costs
- Woodland Creation Programme – £2,357k. Delivery of 143.93 ha of new woodland, including planting, surveys, maintenance, fencing, ground cultivation, project management, deer control, and ongoing scoping and scheme development
- Dunside – £23.66k. Remedial works, including drainage improvements, fencing, beat-up planting, and weeding

Line C4.22 Expenditure on grassland restoration and creation in year

No grassland projects took place within the reporting year.

Line C4.23 Other land cover

No other land cover change projects took place within the reporting year.

Line C4.24 Expenditure on land managed for sequestration in year

The reported figure of £7,157k is the sum of **Lines C4.20-4.23**.

5.2.3 Lines C4.25-C4.27 Memo Lines

Line C4.25 Total area of landholdings in previous year

The total area of landholdings of 21,980 ha is the same as that given in AR25. Despite the exclusion of part of Loch Katrine from the land carbon inventory, we continue to own the land and further studies will be undertaken to further establish the responsibility for carbon in trees and peat within that area. We will continue to review our landholding and improve our data and any changes will be reported on a three - yearly basis when the baseline work is repeated.

Line C4.26 Total CO₂e emissions from landholdings in previous year

AR25 reported a sequestration level of -350 tCO₂e, which remains unchanged in AR26.

Line C4.27 Expenditure on land managed for sequestration in previous year

£5,963k was invested in projects during AR25.

Line C4.28 Resource Recovery

To be developed for reporting during SR27

Lines C4.29-C4.30 Biodiversity and nature-based solutions (interim measure)

The definition of 'area positively managed for nature' covers a range of formal designations as agreed with agencies such as NatureScot, along with areas lacking formal designation but where Scottish Water has undertaken work to improve nature either through direct land management (woodland, peatland, grassland etc) to support carbon and water quality outcomes, or in the delivery of nature-based approaches such as blue-green infrastructure. It may also include improvement to operational sites in the discharge of statutory biodiversity duties, or in the enhancement of biodiversity through projects being delivered within the investment programme (e.g. improved reinstatements).

As a developing area for SR27, this is the first year Scottish Water has sought to report this. It reports on an "area" basis at this stage - square metres of land improved, but expects that for the start of SR27 it will be in a position to report both the land area and the biodiversity unit benefit arising, using methodologies developed with advice from NatureScot, SEPA and Scottish Government.

Similar to the land carbon inventory, the reported benefit in terms of biodiversity units will be calculated using a standard methodology that Scottish Water will set out in its 2026 Biodiversity Report. Additionally, as part of the statutory 3-yearly biodiversity reporting duty placed on public bodies it will undertake updated assessments of the natural capital and biodiversity status of Scottish Water landholdings. Owing to the nature and uncertainty of biodiversity assessments, a direct correlation between progress reported in SR27 and the stand alone periodic assessment of Scottish Water's biodiversity inventory cannot be made and the approach used to report in SR27 will allow a stable method to report cumulative benefits.

The area of Scottish Water's land positively managed for nature was reported as 97,000,000 m² (9,700 ha) in AR25. This was drawn from an external assessment by NatureScot of public landholdings and associated designations, and includes designated lands such as "Special Areas of Conservation" or "Sites of Special Scientific Interest".

This number will be reviewed periodically by NatureScot. There is no set timetable for this and Scottish Water has no direct input into this calculation - it is NatureScot's assessment of the level of statutory protection (Special Protection Areas, Special Areas of Conservation, SSSI, National Nature Reserves etc) that may be present on SW lands, as reported to the Scottish Government. From AR26 the area managed positively for nature covers active interventions during the reporting year and may cover land included in the NatureScot measure where Scottish Water has acted to further improve or change the status of the land (e.g. delivering biodiversity enhancement within a designated SSSI).

Scottish Water has been engaging with NatureScot to pilot mechanisms for bringing more land under formal recognition of this to support delivery of Scotland's Biodiversity Strategy objectives, and progress will be updated in future years as biodiversity reporting is developed nationally.

From AR26 the area managed positively for nature will comprise Scottish Water's active interventions for nature during the reporting year through various data flows. This is not directly linked to the NatureScot number but represents more intentional actions by Scottish Water to manage land for nature and allows annual updating of our biodiversity lines. When NatureScot next update landholdings number, Scottish Water will record this as part of the three-yearly biodiversity duty report as supplementary information whilst continuing to use the interventions via the below data flows as the main source of biodiversity improvement. Due to the difference in the data recorded and uncertainty regarding how NatureScot will assess changes in future, Scottish Water recommends that the baseline for reporting cumulative progress in SR27 should be taken from AR26. This allows a direct comparison and aggregation of intervention area data with the same base data flows.

This unit of measurement for lines C4.29-C4.30 was previously recorded in hectares but has been converted in AR26 to square metres (m²). This is to align with future recording of biodiversity in SR27 Table 1. Using square metres rather than hectares ensures that smaller interventions are not overlooked, particularly for nature-based engineering which delivers benefit to service and nature.

The area positively managed for nature is delivered and tracked through several data flows. Whilst not exhaustive, and open to further / other forms of nature intervention and natural engineering, they are expected to be derived from the following types of activity:

- Woodland:
- Woodland Creation
- Acquired Woodland incorporated into Scottish Water's landholdings
- Nature Regeneration

- Loch Katrine Woodland Creation
- Loch Katrine Natural Regeneration
- Peatland Restoration
- Capital Investment
- MA102 - Biodiversity Enhancement Programme in SR21
- Operational Maintenance
- Nature Based Solutions (Blue/Green Infrastructure, Water/Wastewater Strategy)
- Enabled work on non-SW land*
- Wider Land Use Management, for example whole farm nature plans*
- Nature 30* Scottish Biodiversity Strategy Delivery Targets (in development with NatureScot)
- Biodiversity gain on Woodland Sites*

Some of the data flows highlighted* have not yet been fully established and work will continue to support them becoming fully reportable in advance of SR27.

Peatland and woodland area figures are called out separately in line C4.1 & C4.2 respectively but are also part of the area managed positively for nature as they represent significant activity that improves their associated habitats and the surrounding catchment in terms of climate resilience and water quality. Loch Katrine woodland elements have also been called out separately due to the large scale catchment improvement work they contribute to.

During SR21 Scottish Water developed the Management Approach for Biodiversity, MA102, to develop and pilot the assessment and delivery of biodiversity improvements on Scottish Water land to inform its approach to meeting statutory biodiversity obligations. Pilot work enabled the identification and establishment of "Biodiversity Standard Products" (BSPs) that can be used by project teams to select suitable interventions within existing capital projects (e.g. enhancing biodiversity during reinstatements). Similarly to Capital Investment, MA102 implements BSPs such as wildflower at locations including water and waste water treatment works. These biodiversity elements are then managed via operational maintenance to ensure longevity of these nature interventions.

Capital Investment projects which commit and deliver biodiversity elements beyond what is required as part of National Planning Framework 4 (NPF4) will have their 'extra' elements counted as areas managed positively for nature. These may include small scale interventions such as a hedgerow, wildflower or other condition improvement elements. Scottish Water uses the catalogue of Biodiversity Standard Products (BSP) to allow Project Managers to pick simple interventions based on the land and habitat available.

Beyond the long term management of interventions implemented through MA102, operational maintenance is itself a mechanism to drive nature improvements. This data flow captures areas where alternative site grounds management such as mowing is carried out to encourage or in response to the presence of a specific species that thrives with different levels of vegetation/grass. In agreement with operational staff, certain areas surrounding our assets are less intensively mown or managed differently to support biodiversity.

Nature Based Solutions (NbS) are data flows that include both Sustainable Urban Drainage Systems (SUDS) and larger scale flooding schemes that have blue/green elements primarily for surface water attenuation but apply principles to improve nature through their integration of natural elements in urban settings, creating habitats where classic engineering solutions would not.

The majority of SUDS are built by developers but are vested by Scottish Water when they meet the requirements of Sewers for Scotland v4.0, specifically elements relating to native planting outlined gradients to increase attractiveness for flora and fauna. This places further demand on SW to secure the longer term nature benefits as well as the service benefits of the asset.

In advance of SR27, Scottish Water is developing approaches to engage long term secure agricultural tenants to improve nature through "wider land management" for nature. This will identify the areas which can be improved for biodiversity and contribute to landscape resilience and carbon outcomes. This means working in collaboration with the Land & Estates Teams, Land Agents and tenants to influence improvements here so that whole farms are managed positively for nature. Critically, Scottish Water is doing this for longer term benefits. The majority of Scottish Water's landholdings and secure tenancies are within drinking water catchments, and improved biodiversity and nature resilience will support long term drinking water resilience.

Other data flows which are in development for SR27 include biodiversity on woodland sites and enabled work on non-Scottish Water land. Biodiversity on woodland sites will incorporate elements such as understory planting and managing areas within and beyond the woodland boundaries to fully represent the biodiversity improvement.

Nature30 developed as an indicator of the Scottish Government's Biodiversity Strategy. It is an alternative classification to traditional Protected Areas but area recognised as places that deliver positive, sustained and long-term outcomes for biodiversity. This is signified by NatureScot as Scotland's approach to recognising "other effective area-based conservation measures" (OECMs) that contribute to the "30 by 30" target - 30% of Scotland's land protected for nature by 2030. Sites are identified through previously established biodiversity interventions and assessed by a NatureScot panel as to whether they are awarded this designation and to what extent in terms of area. During 2025-26 Scottish Water worked with NatureScot to pilot the application of Nature 30 criteria to a SW site. This is ongoing for further sites as the methods are being refined.

Line C4.30 will be the cumulative data year on year rather than the difference between years. This will allow tracking in line with the SR27 target surrounding total area of land managed for nature.

5.3 Investment

Related to Management Approach MA077, Scottish Water continues to improve its understanding of annual carbon capture and carbon stocks in landholdings, identifying opportunities for improvement, establishing credible and transparent mechanisms for carbon accounting and working towards delivering increases in annual carbon capture of our landholdings. It is developing partnerships with key stakeholders, such as Forestry and Land Scotland, and developing an engagement approach to work with tenant farmers, neighbours and others to facilitate the delivery of carbon capture.

5.4 Data

5.4.1 Data sources and confidence grades

Data for **Lines C4.1-C4.5** are taken from the Scottish Water land greenhouse gas baseline inventory described above. This consists of the extent of landholdings covered by Scottish Water's GIS system used to assess carbon status. This excludes those small areas of land associated with, for example, operational sites and assets, which were not part of this initial carbon assessment. The division of landholdings between the land types is based on national data sets and will be updated over time with Scottish Water site data.

Land Cover - Work commissioned, through the James Hutton Institute (JHI) in 2024-25, has delivered Scottish Water's first update to the 3-yearly land carbon inventory. This included the latest updates to the Woodland and Peatland Code guidance, and included field survey data to supplement national data sets.

Significant areas of peatland land cover data were updated with ground survey data for the AR25 update. In areas where no field data was available JHI continued to use nationally available data sets (soils, land cover, habitats, national peatland assessments) on a 50x50 m grid to create an inventory for each of Scottish Water's land holdings as per the original baseline work reported in AR23 and in Scottish Water's 2023 Biodiversity Report.

The base land cover map was the freely available Land Cover of Scotland 1988 (LCS88), which represents upland landcover well. Forestry planting is the biggest land cover change since this data was derived. LCS88 was corrected for forestry planting using both Scottish Water forestry data and the Forest Research 2019 National Forest Inventory.

As noted in commentary **Lines C4.6 and C4.7**, these national data sets will continue to be superseded in future 3-yearly updates by ground-truthed field surveys where they are available. Surveys of other land cover types are likely to take place on a site-by-site basis, for example at Loch Katrine as part of the ten-year Land Management Plan developed with Forestry and Land Scotland.

Carbon inventory. The land carbon inventory was formally updated by JHI for AR25. the inventory reported in AR26 is identical and will be superseded only by the next formal update in AR28.

It is important to note that carbon performance of landholdings is a relatively new and developing area, particularly for top-down national assessments. The carbon inventory is assessed using national and international principles and methods for carbon assessment, coupled with expertise from the JHI that adopts the latest academic methodologies for assessing carbon stocks and flows in land cover, soil and vegetation types, as well as national peatland inventory data for indicative condition.

As this is a developing area, a key element of the three-yearly inventory update is a commitment to review methodologies against the latest guidance, academic literature and carbon factors to ensure that they are robust. Where field surveys are completed, the inventory will be updated with the relevant ground-truthed data. Any changes in input data or method in light of new developments and field work will be explained.

Confidence grades for area **Lines C4.1-C4.5** and **Lines C4.11-C4.15** have been assigned based on the use of GIS polygons provided by our land agents, and national data sets of land cover provided and analysed by JHI.

Confidence grades for emissions/sequestration **Lines C4.6-C4.10** and **Lines C4.16-C4.19** have been assigned based on the above land use, plus peatland condition, assumptions on tree age and use of proxy tree species for sequestration rates. All data were provided and analysed by JHI except the ground-truthed peatland conditions assessments, which were conducted by peatland experts and the subsequent emissions calculation applied after discussions with JHI.

5.4.2 Data improvement programmes

Land use and condition is expected to change over time and the strategic and field data sets used to inform it will continually be reviewed and update. Data improvement work is currently prioritising:

Land cover - Observations made over 2024/25 and note that field surveys at peatland sites continue to suggest the actual extent of peatland may be considerably lower than previously estimated using national datasets. While additional data is still required to accurately assign alternative land cover and habitat types, these findings have led to a re-scoping of the survey approach. These developments will be incorporated into future survey work, which will feed into the scheduled three-yearly updates. The next updates are planned for Annual Returns AR27/28, AR28, and the Biodiversity Report in 2029.

Peatland condition - For several sites Scottish Water now has accurate peatland survey data providing condition and depth profiles, in areas where this has not been provided the National Datasets for Peatland and Soil are still used. These surveys have identified differences in peatland extent, and that there are differences between the assumed condition (which forms a

broad range of carbon performance) and the confirmed field condition. Survey information has informed the updated inventory presented in AR25 enabling us to report a narrower range of emissions from this type of land. In discussion with the JHI we have identified further survey needs that will allow us to progressively include more baseline data in the next inventory update, which we will report in AR28.

Woodland age and species - A programme of desk-based record searches and field surveys to ground-truth woodlands, along with surveys of areas of natural regeneration of woodland at Loch Katrine (as confirmed by Forestry and Land Scotland) helped improve the land inventory. These were used by JHI to inform the updated inventory reported in AR25 and which remains the same for AR26. This has led to reduced range of estimated emissions.

Assumptions used for forecast data - the forecast benefit in future years data are reported in line with the explanation provided in C4.16 and C4.17 using area of land improved in year and estimates of benefit based on woodland and carbon codes. They are independent of the formal 3-yearly updates to the baseline and cannot be reconciled with it. We would question whether these lines are useful