

Annual Progress Report (APR)



2023 Air Quality Annual Progress Report (APR) for Shetland Islands Council

In fulfilment of Part IV of the Environment Act 1995, as amended by the
Environment Act 2021

Local Air Quality Management

30th June 2023

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Executive Summary: Air Quality in Our Area

This report considers local air quality management in Shetland, taking into account relevant policy and technical guidance documents.

Since the council's annual progress report for 2021 there has been further progress in continuing to meet and supersede the targets. The projects and ongoing initiatives for 2022 having a positive impact on air quality are detailed in Table 2.1. This holistic vision of local air quality in concert with other carbon reducing initiatives such as roll out of increased EV fleet and charging networks will result in a positive impact on Shetlands local air quality. Further developments in the planning phase of large scale industrial net zero projects coupled with the impending completion of the councils net zero route map bring opportunities for further carbon reduction within the local authority area.

The gradual decline in the offshore oil and gas industry operating throughout the islands has slowed and has seen an increase in the area of decommissioning of redundant offshore oil installations. Air transport and infrastructure movements have seen continued increases in the ongoing recovery from the impacts of COVID-19, demand for oil and gas support operations is increasing as well as commercial passenger transport to and from the islands.

As construction of the Viking Energy wind farm nears completion, further infrastructure developments are progressing in preparation for the islands to be connected to the national grid. This connection will allow the mothballing of the current diesel powered generating station in a switch to renewable energy generation, further improving the air quality with reductions in pollutants emitted.

Finally projects, including a new space centre in Unst, are also nearing completion of construction. The operational environmental management plan for the site have been submitted for review and detail measure to be implemented to mitigate any adverse impacts resulting from the site once operational.

This annual progress report concludes that detailed assessments are not required for any pollutant at this time.

Actions to Improve Air Quality

Shetland Islands Council currently has no AQMA's or action plans and is not undertaking any other air quality related activities. This position is qualified by historic sampling data indicating no exceedances of national air quality objectives are likely to occur within the local authority area. Furthermore, overall reductions can be attributed to a continued progressions in economic activity focused on production of carbon free energy, combined with technical developments within existing local industry to reduced levels of emissions through effective carbon management. These factors combined support the Shetland Islands Council's current position on meeting the air quality objectives.

Local Priorities and Challenges

Shetland Islands Council is committed to maintaining and improving local air quality within the local authority area. To achieve this goal the Council aims to actively assess all new developments submitted to the local authority planning department to ensure compliance with national air quality objectives and maintaining Shetland's high standard of air quality.

How to Get Involved

To receive information on air quality or to report any concerns, the public are encouraged to contact:

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1 Local Air Quality Management

This report provides an overview of air quality in Shetland Islands Council during 2022. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives. This Annual Progress Report (APR) summarises the work being undertaken by Shetland Islands Council to improve air quality and any progress that has been made.

Table 1.1 – Summary of Air Quality Objectives in Scotland

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be Achieved by
Nitrogen dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide (NO ₂)	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
Particulate Matter (PM ₁₀)	18 µg/m ³	Annual mean	31.12.2010
Particulate Matter (PM _{2.5})	10 µg/m ³	Annual mean	31.12.2021
Sulphur dioxide (SO ₂)	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide (SO ₂)	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO ₂)	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 µg/m ³	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m ³	Running 8-Hour mean	31.12.2003

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare publish and implement an Air Quality Action Plan (AQAP) within the shortest possible time and no later than 12 months of the date of AQMA Designation Order. The AQAP must set out measures the local authority intends to put in place in pursuit of the objectives within the shortest possible time. Measures should be provided with milestones and a final date for completion. The action plan itself should have a timescale for completion and for revocation of the AQMA. Where measures to reduce air pollution may require a longer timescale an action plan shall be reviewed and republished within five years of initial publication and then five-yearly thereafter.

Shetland Islands Council currently does not have any AQMAs. Shetland Islands Council does not have a published air quality strategy document as past evidence indicates no exceedances exist within the local authority area. This situation may be reviewed in the future.

2.2 Cleaner Air for Scotland 2

[Cleaner Air for Scotland 2 – Towards a Better Place for Everyone \(CAFS2\)](#) is Scotland's second air quality strategy. CAFS2 sets out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health and fulfil Scotland's legal responsibilities over the period 2021 – 2026. CAFS2 was published in July 2021 and replaces [Cleaner Air for Scotland – The Road to a Healthier Future \(CAFS\)](#), which was published in 2015. CAFS2 aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe". A series of actions across a range of policy areas are outlined, a summary of which is available on the Scottish Government's website.

Progress by Shetland Islands Council against relevant actions for which local authorities are the lead delivery bodies within this strategy is demonstrated below.

2.2.1 Placemaking – Plans and Policies

Local authorities with support from the Scottish Government will assess how effectively air quality is embedded in plans, policies, City Deals and other initiatives, and more generally

in cross departmental working, identifying and addressing evidence, skills, awareness and operational gaps.

Shetland Islands Council takes a holistic view when considering local air quality and measures designed either directly or indirectly to reduce pollutants in order to improve Shetlands already good air quality.

Focusing on place making it can be seen that the local authority does consider air quality in there recently published [Local development plan 2 Main Issues Report](#) and the attached [Strategic Environmental Assessment – Environmental Report](#).

The main issues this report takes account of when setting local development policy for Shetland are the targets set by the Scottish Government to end Scotland's contribution to climate change by 2045. These policy options will also be reflected in the Council's yet-to-be published Net Zero Route Map. Although these policy documents do not specifically mention air quality and the authorities commitment to continued reductions in national pollutant values to facilitate improved local air quality. They do however adopt the key principles stated in part 3 of CAFS 2, in that emphasis should be given on maintaining and developing mixed use neighbour hoods with:

- the population density to sustain local services, planned and in locations that reduces the need to travel unsustainably;
- makes best use of existing transport infrastructure; and
- builds in walking and wheeling as the most natural choice to get around.

As can be seen in the updates to Table 2.2 initiatives which mirror the above principles have been investigated, planned and implemented. This work is ongoing and will lead to the publication of a local Net Zero Route Map, aimed to develop local strategies to reach net zero in a manner that works aligned to island living.

2.2.2 Transport – Low Emission Zones

Local authorities working with Transport Scotland and SEPA will look at opportunities to promote zero-carbon city centres within the existing LEZs structure.

Shetland Islands Council has no Low Emission Zones established within the Local Authority area. It is anticipated that there will be no future need for the implementation of any LEZs

due to the nature and character of the local urban areas. Motor vehicle usage is significantly lower in Shetland compared to mainland urban areas, historical monitoring data qualified there are no exceedances of air quality objectives, supporting the authority's decision not to introduce any LEZ's within the Island group.

Referring to table 2.2, it can be noted that the local authority has actively been investing in both low emission EV vehicle fleets together with EV charging infrastructure, in both urban and remote rural locations. This investment and implementation of a low emission vehicle fleet coupled with development of a wider EV charging infrastructure will further reduce the need to investigate and implement LEZs in the local authority area.

2.3 Implementation of Air Quality Action Plan(s) and/or measures to address air quality

In order to ensure that local authorities implement the measures within an action plan by the timescales stated within that plan, the Scottish Government expects authorities to submit updates on progress through the APR process. Shetland Islands Council has taken forward a number of measures within the current reporting year of 2022 in pursuit of improving local air quality and meeting the air quality objectives within the shortest possible time. Details of all measures completed, in progress or planned are set out in

Table 2.1.

Key completed measures for this reporting year are:

- Publishing of the councils Net Zero Route-map - This document details the predicted outcomes for the local authority area in relation to achieving Net Zero Green House Gas (GHG) emissions by following one of three pathways, Business As Usual (BAU), Pathway A and Pathway B. To enable the development of this route-map a baseline GHG study has been undertaken, modelling the islands emission profile and analysing the potential outcomes of the three pathways in relation to the current baseline levels. Web Link:
[https://www.shetland.gov.uk/downloads/file/6460/shetland-netzero-route-map](https://www.shetland.gov.uk/downloads/file/6460/shetland-net-zero-route-map)
- Local participation of Scottish Government peatland restoration scheme – this is an ongoing project scheduled for completion in 2030, aiming to restore up to 2,500 ha of peatland a year

- Other areas such as project Orion and the development of the Local Authority Climate Change Strategy are progressing as planned and are hoped to be realised in the predicted timescales.

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/Actual Completion year	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
1	Development and introduction of Carbon Management Plan	Policy guidance and development control	2022	Completed		Publication of SIC Net Zero Route-map, replacing the Carbon Management Plan	The Carbon Management Plan will now be superseded by the SIC Climate Change Strategy (due to go to Council for approval by the end of the year), the SIC Net Zero Route Map tool (approved by Council in November 2022)	Non
2	Investment and development of the local authority vehicle fleet to low emission vehicles	Vehicle fleet efficiency	Ongoing	Ongoing	Funded through council budgets	Aim to fully decarbonise the entire SIC fleet by 2045	Ongoing - Currently the business case for the greening of the SIC Fleet (including action plan) is being prepared and nearing completion	Funding and availability of the vehicle type.
3	Investment and development of low energy lighting systems within the local authority's estates infrastructure.	Policy guidance and development control	Rolling program till 2018	Ongoing	Funded through council budgets	Program extended – Ongoing till completed	Ongoing	No Significant Barriers
4	Investment and development of low energy street lighting systems within the local authority's area.	Policy guidance and development control	Year end 2023	Ongoing	Funded through council budgets	Aim to complete works by year end 2023	Ongoing - Replacement of street lighting nearing completion	No Significant Barriers
5	Introduction of Islands wide kerbside recycling.	Policy guidance and development control	Year end 2018	Completed	Funded through council budgets	Completed year end 2018	Implemented on schedule, need for ongoing monitoring and re-enforcement	None

6	Construction and commissioning of a waste recycling facility to sort recyclable materials removing them from the disposal routes including incineration and landfill.	Policy guidance and development control	March 2018	Completed	Funded through council budgets	Completed year end 2018	Building and plant in place, commissioning complete. Site fully operational	None
7	Expansion of Councils fleet of pool vehicles for essential car users employed within the local authority.	Promoting low emission transport	2045	Ongoing	Funded through council budget. We currently have a bid in with UKRI Innovate UK scheme for funding to supplement council budget.	Aim to complete full transition by 2045	Further expansion of this initiative through 2021 A 'Car Club' project has been initiated to review opening up a pool of vehicles to SIC and partnership organisations. The option for this to be open to staff for personal use, and the community is also being reviewed as part of this project. An objective is to reduce the number of second cars, and the number of petrol/diesel cars in operation.	Continued central government funding commitment, availability of suitable plant and operators to complete the volume of work planned
8.	Planning, development and implementation of new Net Zero Route Maps for the local authority area	Policy guidance and development control	2022	Completed	Funded through council budget	Establish local GHG Baseline. Proposed 3 pathways ahead to reach Net Zero	The Shetland and SIC Net Zero Route Maps were approved by Council in November 2022. The SIC Climate Change Strategy and Action Plan are currently in the final stages of development and will be presented to Council for approval by the end of 2023. A Shetland Climate Change Strategy Steering group has been established, under the Shetland Partnership. Group members include HIE, UHI, Nature Scot, Visit Scotland, NHS, SIC. An overarching Shetland Climate Change Strategy is under development, to be adopted by the Shetland Partnership. Organisational strategies and action plans will deliver against	Restricted access to online learning material for some staff groups, varied forms of content delivery to be investigated

							the wider Shetland Climate Change Strategy objectives.	
9.	Devising of locally focused carbon use modelling. Focusing on establishing baseline data collection, analysis and reporting	Policy guidance and development control	2022	Complete	Funded through council budgets	Baseline data used in the completion of the Net Zero Route-map	Report complete, see measure No.8 above	
10.	Local participation of Scottish government peatland restoration scheme	Policy guidance and development control	2030	Ongoing	Council participation is funded through council budget	Projected 4,500ha of peatland restoration to be completed in a calendar year	Ten year rolling application program. A Shetland Peatland Partnership has been set up with the aim to accelerate action on peatland restoration in Shetland. The Net Zero Route Maps have highlighted the extent on carbon emissions from degraded peatland in Shetland and the rate at which peatland restoration needs to take place	
11.	Development of locally focused carbon literacy training, for local businesses and the general public	Policy guidance and development control	2022	Complete	Funded through council budget	Online Carbon training available via council's online training platform. Regular carbon literacy, training workshops now available to SIC staff.	E-Learning module developed and available to all staff online. A programme of regular carbon literacy training workshops are now available to SIC staff.	No Significant Barriers
12	Proposed development of a Local Energy Hub Project Orion between the SIC and OGTC(Oil & Gas Technologies Centre), also linking with Scottish Hydrogen Fuel Cell Association-SHFCA	Policy guidance and development control	2030	Ongoing			This is a long term project aimed at changing the energy market to a sustainable low carbon model	No Significant Barriers
13	Investigation and planning the business case for Fixed Links within the Island group to supersede the use of	Policy guidance and	No timescale decided	Ongoing			This project is in its early stages, feasibility studies being undertaken	Funding sources

	inter-island ferries for travel between the main isles and the largest populated out islands.	development control						
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3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how local concentrations of the main air pollutants compare with the objectives.

Shetland Islands Council does not undertake any automatic (continuous) monitoring within the authority's area. This is due to past monitoring results indicating that concentrations were all below the national objectives, thus negating the need for further monitoring.

3.1.2 Non-Automatic Monitoring Sites

Shetland Islands Council does not undertake any non-automatic (passive) monitoring of objective pollutants within the authority's area. This is due to past monitoring results indicating that concentrations were all below the national objectives, thus negating the need for further monitoring.

3.1.3 Other Monitoring Activities

Shetland Islands Council does not undertake any other forms of air quality monitoring within the authority's area.

3.2 Individual Pollutants

3.2.1 Nitrogen Dioxide (NO₂)

Shetland Islands Council does not undertake any non-automatic (passive) monitoring of NO₂ within the authority's area. This is due to historic monitoring results indicating that concentrations were all below the national objectives, thus negating the need for further monitoring.

3.2.2 Particulate Matter (PM₁₀)

Shetland Island Council does not currently carry out monitoring of PM10 due to past monitoring results indicating that concentrations were all below the national objectives, thus negating the need for further monitoring.

3.2.3 Particulate Matter (PM_{2.5})

Shetland Island Council does not currently carry out monitoring of PM2.5 and has no plans for future monitoring.

3.2.4 Sulphur Dioxide (SO₂)

Shetland Islands Council does not undertake any monitoring of SO₂ within the authority's area. This is due to past monitoring results indicated that concentrations were all below the national objectives, thus negating the need for further monitoring.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

Shetland Islands Council does not undertake any monitoring for CO, Lead and 1, 3-Butadiene within the authority's area and has no plans for future monitoring.

4 New Local Developments

Shetland has no new developments with fugitive or uncontrolled sources within the local authority area.

4.1 Road Traffic Sources

Shetland has no new transport sources within the local authority area.

4.2 Other Transport Sources

Terminal passenger numbers at Sumburgh have seen an increase during 2022, rising from 183,903 in 2021 to 247,538 an increase of 35%. Due to the removal of travel restrictions implemented because of the response to COVID-19 it is expected that air travel will continue to increase through 2023. Continued growth may be moderated due to continued instability in geo political situations and volatile economic performance both domestically and globally. Looking at freight tonnage it can be seen that this has increased from 189 tonnes in 2021 to 199 tonnes in 2022, an increase of 6%.

Tingwall (Lerwick), Shetland's inter-island airport, has also seen a recovery in passenger numbers with the easing of COVID-19 restrictions, reporting a 25% increase in passenger numbers from 2,300 in 2021 to 2,886 in 2022. No figures are reported for freight tonnage carried on the inter-island air service.

As in previous returns, it is noted that Shetlands airports have never come close to the specified criteria indicating that a detailed assessment would be necessary, therefore there is no need for further consideration at this time.

4.3 Industrial Sources

Shetland has no new industrial sources within the local area.

4.4 Commercial and Domestic Sources

Shetland has no new commercial and domestic sources within the local authority area.

4.5 New Developments with Fugitive or Uncontrolled Sources

Shetland has no new developments with fugitive or uncontrolled sources within the local authority area.

However, it should be noted that the main ground works for the consented Viking Energy Wind Farm development, (2009/191/ECU) & (2018/335/ECUCON) as well as the associated electricity converter station and interconnector cable facilities (2009/224/PCO) & (2015/302/VCON), that commenced in earnest during the early months of 2020, are nearing completion. The development is scheduled to become operational in 2024.

Application 2021/005/PPF for a vertical launch space port including launch pad complex, satellite tracking station, assembly and integration hangar buildings, which is to be built on land at Lamba Ness, Unst, Shetland is nearing the end of construction and is aiming to commence launch operations toward the end of this year into the beginning of 2024. The Environmental Health Department will continue to engage with and monitor this development once it becomes operational.

5 Planning Applications

Application 2022/260/PPF for the construction of a development platform and associated earthworks and drainage on land by Lower Blackhill Industrial Estate, Gremista, Lerwick ZE1 0PX was approved and commenced within the reporting year. The platform is planned to accommodate a proposed Lerwick Greener Grid Park standby facility, comprising Battery Energy Storage System (BESS). The facility is designed to balance local electricity grid loading in the event of power outages from the national grid. The facility is designed to ensure continued supplies to Shetlands power network during the run up time needed to start generation from the soon to be mothballed Lerwick diesel power station.

The mothballing of the power station is planned to start on commissioning of the Viking energy windfarm and connection to the national electricity grid via a subsea interconnector cable. This development will improve the local air quality by the removal of a significant source of pollutants within the Lerwick area.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

Shetland Island Council does not currently conduct active or passive air quality monitoring. Historic monitoring data confirms that this local authority area does not have any exceedances and so this negates the need for further monitoring. Therefore, as no new data has been collected, no new AQMAs are being considered.

6.2 Conclusions relating to New Local Developments

As detailed in last year's report there are a number of ongoing large scale wind farm developments that have the potential to impact local air quality in the short term during the construction phases. These impacts should be mitigated by the implementation of effective construction environmental management plans together with ongoing compliance monitoring by Council officers and external auditors. Further to these current and planned developments this trend is planned to be supported and enhanced with current and future reductions in the use and reliance on fossil fuel for local transport and power generation, with the eventual generation of cleaner electricity by large wind farm developments currently under construction in the central mainland.

6.3 Proposed Actions

Shetland Islands Council's continues to work on its development strategies and internal efficiency and carbon reduction initiatives. It seeks to further develop the whole islands holistic view to achieving a net zero carbon economy. There will be ongoing monitoring of the identified activities in Table 2.2. This will enable feedback into the Council's efficiency savings process and to ensure that key performance indicators are being achieved. Initiatives will also be continually reviewed and refocussed, where necessary, so that the Council delivers on planned outcomes. Meanwhile, the Council has no plans to introduce any active monitoring of airborne pollutants at this time. Our next course of action will be to submit the next Annual Progress Report by June 2024.

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

Shetland Islands Council has not identified any new sources relating to air quality within the reporting year of 2022.

Shetland Islands Council has not completed any additional works within the reporting year of 2022.

Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
APR	Air quality Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References

1. Shetland islands council, local development plan – Main Issues Report 2022
<https://www.shetland.gov.uk/downloads/file/4785/main-issues-report-2022>
2. Shetland Islands Council, Local Development Plan 2, Strategic Environmental Assessment – Environmental Report
<https://www.shetland.gov.uk/downloads/file/4788/sic-ldp2-mir-sea-environmental-report>
3. CAA air passenger and air freight information access via the Civil Aviation Online web data files, web link for air passengers;
<https://www.caa.co.uk/Documents/Download/9116/47a460b2-0592-4ef7-b24b-aa5e27ccfce4/5643>
<https://www.caa.co.uk/Documents/Download/9116/47a460b2-0592-4ef7-b24b-aa5e27ccfce4/5653>