



British  
Geological  
Survey

# Environmental Sustainability Strategy — version 15/6/21

*BGS are committed to transparent reporting of sustainability data, as well as open communication regarding future goals and how they will be achieved.*



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# Foreword

This report is published by the British Geological Survey (BGS) and outlines how we are moving towards greater environmental sustainability (minimising harm and enhancing benefit) whilst staying at the cutting edge of our research. Our strategy follows our parent organisation's (UKRI) vision to 'embed sustainability in everything we do' (UKRI Strategic Prospectus, 2018). We will embed it in all we do and continue to make a positive contribution by lowering our environmental impact and addressing current environmental challenges and global sustainability issues.

## Acknowledgements

A large number of BGS staff have contributed to the project through collection of data, giving their advice, writing and reviewing, etc. This collection of staff, the BGS Environmental Sustainability Strategy Group, is as follows:

Nicola Atkinson, Andrew Bloodworth, Lyndsey Clayton, Amanda Clewes, Daniel Condon, Leah Crosby, Daniel Crow, Lily Cullen Coates, Anneli Evans, Daren Goody, Henry Holbrook, Andrew Hughes, Jack Lacey, Malcolm Laird, Angela Lamb, Melanie Leng, Peter Lyons-Lewis, David Macdonald, Susan Macmillan, Alix Masterson, Audrey Ougier-Simonin, Penelope Reeve, Helen Smith, Stephen Thorpe, Lindsay Tindall, Rob Ward, Chris Williams, Lisa Willott and Savannah Worne.

# BGS Environmental Sustainability Strategy

BGS is a world-leading geological survey and environmental science organisation, delivering a programme of research internationally. We are focused on research to understand the Earth and its associated environmental processes and, by doing so, we contribute to creating a more secure and sustainable future. As the national geological survey, we are the UK's premier provider of objective and authoritative scientific data, information and knowledge to help society understand our Earth.

We recognise that we are experiencing a period of unprecedented environmental change and societal expectation to respond to this change. Positive action is needed to address the environmental sustainability challenges, including climate change and loss of biodiversity, both of which are a result of human actions.

Our research, focusing on decarbonisation and resource management, environmental change adaptation and resilience, and multihazards and resilience, enables us to understand how our planet is changing and to contribute solutions and adaptive responses. We acknowledge, however, that the research we undertake and how we support it has its own impact on the environment. We must understand this impact and work toward reducing it to a minimum. This is the focus of our Environmental Sustainability Strategy.

This document outlines how we will move towards greater environmental sustainability (minimising harm and enhancing benefit) whilst staying at the cutting edge of our research through 16 commitments. Our strategy follows our parent organisation's (UKRI) vision to 'embed sustainability in everything we do' (UKRI Strategic Prospectus, 2018), as well as aligning with the objectives of the European Union Climate Adaptation Plan<sup>1</sup>. We will embed it in all we do and continue to make a positive contribution by lowering our environmental impact and addressing current environmental challenges and global sustainability issues. Through this, we will also drive sustainable innovation within NERC and the wider environmental science community.

## Our strategy

Our strategy implements the UKRI Environmental Sustainability Strategy (2020) and the NERC Responsible Business Statement. It also complements BGS policies on equality, diversity and inclusion, health and safety, research ethics and well-being. It outlines our ambitions for the first five years as well as the longer term in moving towards achieving a 'net zero' carbon position by 2040.

The strategy applies to all BGS sites, although we have several managed sites where we will work with the respective estate owners/managers, such as:

- Lyell Centre, Edinburgh (Heriot-Watt University)
- Wallingford (UKRI/UK Centre for Ecology & Hydrology)
- Cardiff (Cardiff University)
- Belfast (D for the Economy)
- London (Natural History Museum)

The Keyworth campus (BGS head office) is where we can change estate management directly and where we operate large research laboratories and facilities. At Keyworth, we can actively record and manage our environmental sustainability performance.

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<sup>1</sup> [https://ec.europa.eu/clima/policies/adaptation/what\\_en](https://ec.europa.eu/clima/policies/adaptation/what_en)

BGS also collaborates with other organisations in the UK and internationally and we will actively support our and their environmental sustainability agendas and encourage them to share our values.

We pay for a wide range of goods and services (e.g. energy; water; computing; transport) and we will positively influence environmental sustainability performance of our suppliers and the choices we make.

### Values

Like UKRI and NERC, we will adopt an ambitious environmental sustainability strategy. We will:

- embed environmental sustainability into our corporate decisions and ways of working through our collaborative research
- ensure that our approach to research has a positive impact on the environment
- be transparent about who we work with and why
- ensure our collaborations address environmental sustainability

### Timescale

We aim to achieve net-zero carbon for our directly managed estates and research in line with the UKRI commitment. By 2040, we will have substantially raised our standard for environmental sustainability and we will have fully embedded it in our science strategy and estate management; we plan to work beyond compliance.

We will be transforming the way we work, firstly by baselining and benchmarking the current environmental performance of our estate (electricity; gas; water; waste). This will identify gaps in the way we collect data and build a foundation for improvement.

We will work with our funders and supply chain to drive positive environmental improvements. We acknowledge that major investments are required and will make cases for these, for example:

- increase on-site renewable energy generation (solar; ground-source heat pumps)
- increase use of electric hire vehicles
- introduce a staff carbon budget for business travel

In addition, we will make quick-win improvements where we can, for instance phasing out all non-recyclable and single-use plastics. We will ensure our catering is more sustainable, e.g. using local, organic, plant-based and reducing high-impact foods. We will increase biodiversity on our estate by planting more trees, allowing areas to naturalise, designating no-mow areas between April and October to encourage wild flowers, and enabling staff to have a community garden. Where we are not the owners or managers of the sites that we occupy, we will seek to influence the organisations that are to meet similar environmental sustainability targets.

We will publish our environmental sustainability plans with clear milestones at six-monthly intervals, establish KPIs and report performance and progress towards the strategy to the staff, the BGS Senior Management Board, the BGS Board and UKRI.

### Priority areas

To achieve significant improvements in our environmental sustainability we have identified three priority areas within which we will take action. These reflect our assessment of areas where we impact the environment and where we can make significant improvements. These are:

- the BGS estate
- our business travel
- working practices

We have set out our key 16 commitments, provided an action plan and provided a responsible person and reporting line for each of these areas. Our pathway to delivery will be published every year, where commitments will be refreshed and achievements summarised.

## **Governance**

A successful delivery plan requires a governance strategy:

- BGS Director: accountable for delivery and effective resource allocation.
- BGS Senior Management Board: responsible for strategic delivery and implementation.
- BGS Environmental Sustainability Strategy Group: provides the evidence and advice to BGS to ensure implementation.

## **Communication**

External and internal engagement will be key to drive environmental improvement. Our communication team will ensure all BGS staff are fully informed and feel part of the process via a communication plan, which will communicate our environmental sustainability performance in a coherent way for both internal and external audiences. The communication plan will include a calendar of events for internal and external transparent dissemination of sustainability goals and data collection. Environmental performance will be framed in the context of the UN Global Sustainable Development Goals (SDGs) where applicable.

At the end of year five, we will obtain independent external assurance of our performance against our objectives.

# Commitment 1. Reduce energy and fossil fuel consumption on site

## Scope

Energy and fossil fuels are used to power all facilities and laboratories on site and form an essential component of day-to-day operation.

## Aims

- Understand our energy requirements.
- Reduce our energy consumption and increase our use of renewable resources.
- Work towards achieving net zero carbon for energy sources across BGS estates.

## Data required

- Analysis of historical energy usage.
- Quantification of the normal variability of energy usage on sites to the appropriate granularity.
- Assessment of existing usage to identify thresholds for anomalous readings that require investigation and document reasons for anomalous readings (to be stored by the environmental advisor).
- Compilation of all reports in use that are actioned and relevant.
- Identification potential projects to improve to building control strategies and put them forward in a long-term maintenance capital plan.

## Delivery mechanisms

- Introduce sub-metering of sites at Keyworth (2020–21) and Edinburgh (after 2021).
- Use base and variable load of sites to steer strategic investment on infrastructure improvements, improve strategy and timings of heating/cooling and drive behavioral improvements.
- Ensure our building management system (BMS) optimises business improvements through:
  - reviewing maintenance regime and current status 2020–21
  - documenting and rectifying improvements and faults in a timely manner
  - fixing faults already identified in 2020–21
- Invest in improving breadth of scope of the controls of the BMS to drive improvements in energy usage 2022–23.
- Ensure our energy contracts detail where supply of energy comes from and that it demonstrates zero fossil fuels for electricity generation.
- Identify improvement projects for building control strategies, considering renewable energy or low-carbon technology for all major infrastructure projects and replacements.

## KPIs

- Publish reports highlighting variance in energy use on a monthly basis to area champions, ensuring that targets are set for each area.
- Annual review of strategies for each area covered by our BMS and/or when significant changes to sites are made from 2021 onwards.
- Report evidence for annually reduced energy use, year-on-year.
- Review our energy supply contract and move site supply to a non-fossil fuel generated supply.
- Put forward improvement projects onto long-term maintenance capital plan.

Responsible person: head of estates.

# Commitment 2. Reduce water usage

## Scope

Water is used throughout all facilities and laboratories across the sites and is an essential component of day-to-day operation.

## Aims

- Understand our water usage.
- Increase our use of efficient technology.
- Consider and implement grey water technologies where appropriate.
- Reduce our water consumption.

## Data required

- Analysis of historical water usage.
- Quantification of the normal variability in water use on sites on a four-weekly basis.
- Assessment of existing usage to identify thresholds for anomalous readings that require investigation and document reasons for anomalous readings (to be stored by the environmental advisor).
- Compilation of all reports in use that are actioned and relevant.
- Identification of potential projects to improve water efficiency to be put forward in a long-term maintenance capital plan.

## Delivery mechanisms

- Conduct water audits across UK estates.
- Introduce sub-metering of sites at Keyworth.
- Use base and variable usage of sites to steer strategic investment on infrastructure improvements and drive behavioral improvements in water usage.
- Use the data from sub-metering to detect leaks early and ensure quick repairs. BGS Estates to prioritise water leaks through the Computer Aided Facilities Management system to reduce unnecessary overuse of water. Ensure all existing leaks are documented and repaired in a timely manner.
- Ensure all grey water is re-used where possible.
- Consider water-efficient/water-free technologies for all major infrastructure projects and replacements.

## KPIs

- Publish reports highlighting use and variance to normal usage on a monthly basis to area champions, ensuring that variance is investigated and corrective actions carried out.
- Ensure that water usage targets for sub-metered areas are set.
- Report evidence for annually reduced water use, year-on-year.
- Put forward improvement projects in a long-term maintenance capital plan.

**Responsible person: head of estates.**

## Commitment 3. Reduce waste sent to landfill

### Scope

Waste collected includes general waste, mixed recycling, food waste, cardboard, metal, wood, waste electrical and electronic equipment and hazardous/chemical waste.

### Aims

- Minimise the overall creation of waste produced on site.
- Recycle as much waste as possible.

### Data required

- Historic and current data on waste, obtained from waste contractor on the customer portal.
- Compilation of all reports in use that are actioned and relevant.
- Record of items sent to recycling companies and re-used by staff (with appropriate permission).
- Ensure recycling companies are verified.

### Delivery mechanisms

- Appoint local 'green champions' (as part of laboratory efficiency assessment framework).
- Optimise internal communications. Publish results to staff when savings are made using digital signage, posters and face-to-face interactions. Encourage reduce/re-use/recycle principles (see Commitment 13).
- Work on-site with staff from each area to establish where the biggest waste reductions can be made.
- Aim to reduce consumption and/or increase recycling through using more recycled materials and products with a higher recycled content.
- Work with the waste contractor to identify the appropriate waste initiatives they provide. Ensure recycling is optimised. Consider and implement suitable initiatives where possible.
- Discuss strategies to minimise the need for ad hoc services with the waste contractor.
- Introduce use of eco-friendly cleaning supplies, including refillable cleaning products and biodegradable bin bags and rubber gloves.

### KPIs

- Demonstrate waste reduction, year-on-year.
- Set targets for the site, in agreement with staff.
- Implement staff engagement strategies to raise awareness and encourage reduce/re-use/recycle principles.

**Responsible person: head of estates.**

# Commitment 4. Reduce and recycle paper

## Scope

This commitment includes reducing the use of paper and cardboard as a consumable for business purposes, including reduced use of printers and increased use of recycled paper/cardboard where possible. This commitment aligns with paper/cardboard reduction mechanisms outlined in Commitment 3 (reduce waste sent to landfill), Commitment 4 (more sustainable IT infrastructure), Commitment 8 (more sustainable laboratories), Commitment 12 (more sustainable procurement) and Commitment 13 (advocacy, education and communication).

## Aims

- Reduce use of paper and cardboard for business purposes
- Increased use of recycled paper/cardboard where possible
- Ensure current paper supplies meet global sustainability standards

## Data required

- Current consumption rate of paper used in printers
- Baseline data on paper/cardboard recycling
- Analyse staff perceptions on recycling through environmental sustainability survey

## Delivery mechanisms

- Reduce the number of printers on site to a minimum to meet business need, keeping the printers with the greatest efficiency with regards to energy consumption, consumables. Where possible, use recycled paper.
- Provide training for staff on use of Microsoft Teams/Sharepoint to facilitate moving paperwork for business purposes online, to eliminate the need for printing/use of paper, for example for administrative tasks.
- Ensure the majority paper/cardboard/wood procured and used on site is certified by the Forest Stewardship Council (FSC)
- Introduce additional paper/cardboard recycling bins in laboratories and office spaces
  - Look towards obtaining more easily identifiable recycling bins.
- Encourage and inform staff to recycle when possible through appropriate signage and internal communications.
- Consider the needs for business cards. Moving to digital alternatives or using recycled paper when printing. Introduce annual “surrender scheme” for recycling of old business cards.
  - Print business cards only where necessary using small digital runs on recycled stock.

## KPIs

- Reduce printer hardware to 1 printer per 100 staff (down from 1 per 60).
- Evidence a decrease in the amount of paper used through printing.
- Ensure regular supply of internal communications through the daily brief/on-site signage
- Ensure the majority of paper/cardboard/wood procured is recycled and/or FSC accredited.
- Evidence an increase in use of recycled business cards, as well as recycling through a surrender scheme.

**Responsible person: head of estates.**

# Commitment 5. More sustainable IT infrastructure

## Scope

IT infrastructure includes server infrastructure concentrated in dedicated computer rooms and dispersed equipment, for example desktops, laptops, printers and network switches. Sustainability targets will also consider the raw materials used and waste generated in the manufacture of IT infrastructure, the energy consumed during use of the infrastructure and the waste generated by its disposal. The aims of this commitment align with those of Commitment 12 (more sustainable procurement).

## Aims

- Use efficient equipment with the lowest energy requirements and longest life spans.
- Purchase from ethical sources.

## Current measures

- The Keyworth computer room was built in 2010 to a high standard, which was rated excellent on Building Research Establishment Environmental Assessment Method (BREEAM) standards and has an energy efficiency value of A17.
- The cooling system within the computer room extracts and transfers excess heat to one of the geological core stores for underfloor heating to maintain an ambient and steady temperature.
- Industry standard computer room air conditioning (CRAC) systems are available in the event of failure of the heat exchange system.

There is no dedicated computer room at the Lyell Centre. Instead, BGS IT systems are hosted by Heriot-Watt University in two of the university's own computer rooms. BGS has no control over the environmental methods or standards in these cases. Many of the issues in this section overlap with the energy method statement.

Procurement of server infrastructure and end-point items (e.g. desktops and laptops) is via UKSBS. In the run up to and during the Covid-19 lockdown, several dozen refurbished laptops were purchased to equip staff to work from home. These purchases represent good value for money as well as extending the useful working service life of these devices.

Approximately 80 per cent of BGS server infrastructure is virtualised, meaning these systems run as in-memory virtual machines on specialised blade infrastructure. This is not only more sustainable than running separate physical servers but also offers performance and business continuity benefits. Most of the remaining 20 per cent run as physical servers for performance or operational reasons.

End-of-life data storage media such as hard drives, data tape cartridges and solid state devices are physically crushed on site (meeting security audit criteria) and the residue is taken away for recycling via separation, extraction and reuse of component materials. Larger infrastructure is, where possible at end of service life, returned to manufacturers or refurbishment contractors via buy-back or donation schemes. The equipment is then either refurbished and re-used or recycled.

## Data required

- Itemise all hardware on site.
- Record and keep logs of energy usage in relation to IT infrastructure.
- Record and log use of IT consumables and equipment returned for recycling.

### Delivery mechanisms

- Consider environmental sustainability when purchasing hardware, alongside specification required and cost, including energy efficiency and anticipated length of services.
- Reduce the number of printers on site, keeping the printers with the greatest efficiency with regards to consumables. Where possible, use recycled consumables (e.g. printer toner cartridges).
- Future procurements should consider use of refurbished stock instead of buying new equipment, where possible.
- Assess the financial possibility of investing in newer technologies for data storage, such as solid-state hardware, which reduce power consumption and have lower heat levels. Current data storage systems and high-performance computer (HPC) systems generally consume large quantities of power and generate the most heat and require cooling.
- Quiesce data storage and HPC systems (both processors and disks) during times of low demand to reduce power consumption of these systems.
- Further investment in secure remote-working systems, video conferencing and collaborative technologies should be investigated, to reduce the reliance on and need for travel to other offices and conferences.
- Continue to ensure end-of-life equipment is recycled in a secure and eco-friendly manner. Recycle on-site for security purposes and verify service providers.
- Improve the effectiveness of internal communications with regards to IT infrastructure efficiency, e.g. reducing power consumption during periods of low demand.

### KPIs

- Assess improvements in energy consumption from IT infrastructure once sub-metering is installed.
- Set targets for energy consumption by IT infrastructure for each site, in agreement with staff.
- Implement staff engagement strategies to raise awareness and encourage reduce/re-use/recycle principles (see Commitment 13).
- Report on possibilities for investment in new technologies that will reduce energy consumption and promote sustainable energy use.

**Responsible person: head of IT.**

# Commitment 6. Increase biodiversity on Keyworth site

## Scope

This commitment is only relevant to our Keyworth site, where we manage the estate. This commitment is owned by the BGS Estates team in conjunction with a small group of staff volunteers (the Wilding Group). There is a plan for representatives of the two groups to meet at regular intervals to support each other's endeavours in respect to BGS biodiversity and keep a log of activities, for example through blogs.

Increasing biodiversity on our estate will lead to a more environmentally and ecologically friendly place. We aim to promote biodiversity and make the site more nature friendly and a better place to work.

## Aims

- Plan and secure more than 25 per cent more wildlife areas, including increased trees planted per annum.
- Create new habitats, including spring-flowering plants and wildlife refuges (bird and insect hides).

## Current measures

During 2019 and 2020, 15 trees were planted per year. A 2007 tree survey of the Keyworth site identified 338 trees belonging to 62 species, including many native trees such as poplar, birch, rowan, sweet chestnut, willow and hornbeam. Since then, staff have established fruit and nut trees on site and plan to plant a small orchard for both wildlife and staff enjoyment, when a suitable site and funding has been found.

Currently approximately 50 per cent of the site is left unmown between April and October, with plans to increase this through 2021, whilst continuing to mow or maintain some other areas for recreation and the aesthetic appeal of the campus. There are also currently bee orchids flourishing on site, which fall within the no-mow plan.

The no-mow plan is an essential component of this sustainability commitment, as bees have fared quite badly over recent years through both pesticide (over)use and disease (the varroa mite). This scheme is supported by local residents who have beehives nearby. Through instigating a 'no summer-mow policy', both domestic and wild bees are able to thrive.

There are also currently a few bird and bat boxes on site, although some are in various states of disrepair.

## Data required

- Identification of funding opportunities for native tree planting and rewilding schemes relevant to the Keyworth site.
- Identification of areas of bee orchid growth.

## Delivery mechanisms

- Plant trees and shrubs, e.g. native broad leaf trees (with berries), in the more remote parts of site to help sequester carbon emissions and preserve natural local environment/biodiversity.
- Update the currently reduced grass-cutting programme to:
  - protect areas of wild orchids
  - allow wild-flower meadows to propagate

- include some areas that will continue to be mown but with islands of wild flowers
- Mark areas of dense orchid growth with small flags to allow staff and visitors to enjoy them and establish a flexible plan that accommodates orchid migration around site.
- Create more suitable habitats for small-colony wild bees in coordination with the BGS Wilding Group.
- Establish 'insect hotels', which also encourage further biodiversity, including butterflies, moths and insects, to colonise on site.
- Leave some parts of site completely wild (no planned gardening) with logs from felled (dead and dying) trees left to decay naturally.
- Areas such as the Hanlon House garden (looked after by the Wilding Group) will retain woody debris (old bramble; wood chipping, etc.) in heaps to support small animals.
- Investigate increasing on-site composting facilities.
- Plant geologically appropriate plants to enhance the significance and relevance of the current BGS Geological Walk. Small signs should be added that highlight the plants and their geological significance. This initiative could be owned and managed by the Wilding Group.
- Install more bird and bat boxes on suitable trees or buildings (where appropriate) and fix or replace existing bird and bat boxes in disrepair.
- Investigate the availability of space for small plots that could be used for orchard and communal gardening, which can be made available for individuals or groups to grow their own produce.
- The Wilding Group will reinstate the wildlife database, where we will record all species found on site to monitor biodiversity progress.

### KPIs

- Assess the impact on biodiversity through monitoring surveys of key species and spaces, including orchid growth.
- Implement staff engagement strategies to increase awareness and encourage sustainable practices that benefit local biodiversity.
- Work alongside the Wilding Group to evaluate the success of implemented measures and identify future possibilities to increase biodiversity of the Keyworth site.
- Aim to ensure regular planting/management of trees and shrubs on site.

**Responsible person: head of estates.**

# Commitment 7. Sustainable internal catering

## Scope

The strategy applies to all aspects of sustainable food, including procurement, preparation, provision, food waste and waste management, canteen operation and general catering activities. This applies to all BGS sites where food is purchased or sold by BGS. This food strategy will apply to all of our catering activities and food served for all our events, and will be fully reflected in our catering tenders and contracts. The aims of this commitment align with those of Commitment 12 (more sustainable procurement).

## Aims

- Reduce impact on the living environment.
- Reduce consumption of high carbon-footprint foods.

## Current measures

BGS has a responsibility to procure, prepare and dispose of food in accordance with our procurement procedures, environmental management system (ISO 14001) or local environmental procedures. BGS Estates has overall responsibility for the implementation of the sustainable catering strategy within the services delivered, with support from the BGS Sustainability Group. This group will actively seek to engage with all stakeholders and customers in the continued development of this strategy. This strategy will be implemented, monitored and annually reviewed by the SSG.

## Data required

- Establish baseline data about staff catering requirements by January 2021, for example using a staff survey.
- Inventory of food products and indicator of their sustainability
- Review of catering spends from non-sustainable sources.
- Review the number of food deliveries per week.
- Quantification of current food waste per week and monitor to set appropriate reduction targets.

## Delivery mechanisms

- Review all catering spend at BGS and reduce suppliers and food from non-sustainable sources, e.g. palm oil; fish; red meat, etc.
- Promote plant-based diets that feature seasonal fruit and vegetable produce.
- Reduce the amount of meat served, meat that is served should aim to meet Red Tractor Assured welfare standards, considering carbon-smart sources and locally produced ('Farm to Fork').
- Serve only sustainable fish and only those which are listed on the Marine Conservation Society's 'Fish to Eat' list.
- Investigate gaining status as a Fairtrade catering operation, keeping up-to-date with national and international research on palm oil.
- Increase the offering of healthy balanced meals, in line with Department of Health guidance.
- Work with suppliers to minimise the number of food deliveries made to BGS catering per week.
- Actively seek to reduce food waste through:
  - auditing of main sources of waste
  - implementation of more efficient ordering, storage and stock rotation
  - running customer surveys to ascertain why certain recipes are unpopular
  - separating wet waste from dry waste
  - re-auditing our waste

- ensuring adequate and uniform bins are available across the campus
  - developing a plan for reducing waste to an absolute minimum
- Ensure that dry waste (e.g. cardboard; paper; metal) is kept separate from wet waste (e.g. food) and send any unavoidable food waste (e.g. potato peelings) for composting or energy recovery.
- All waste oil to continue to be stored in accordance with BGS's environmental management system and collected by an approved contractor and recycled.
- Continue our investigations into a viable and environmentally friendly and responsible solution to composting our food waste.
- Continue to promote reusable products e.g. colleagues using their own cups.
- Measure all current spend on disposables and set a target of reduction of the amount of disposables purchased with a view to hitting zero single-use containers and utensils as soon as practicable.
- Reduce reliance on bottled water and reduce our water consumption through ensuring tap water and re-usable or recyclable drinking vessels and water fountains are freely available to all our service users, visitors and staff, choosing mains-fed systems instead of bottled water systems.
- Communicate our food policy and specific information about what we are doing to improve the sustainability of our food to service users, visitors and staff via the staff intranet, newsletters and point-of-sale marketing (to include menus and marketing screens) on a quarterly basis.
- Hold quarterly meetings with all relevant stakeholders, including colleague representation.
- Train all catering staff in food sustainability. As a minimum, staff will be aware of best practice and the various certification systems and their relevance to food production and the food products we serve.

### KPIs

- Evidence a 50% reduction in food from non-sustainable sources, communicating results with staff.
- Increase the amount of livestock reared under Red Tractor Assured by 10 per cent a year.
- Decrease the number of menu items containing ruminant meats by one each year.
- Increase the provision of plant-based options in the canteen on a daily basis so that there is always at least one vegan option on the menu, including main meals, cakes, chocolate and snacks, to match, replace or provide alternative to the non-vegan options currently available.
- Ensure all of our tea, coffee, bananas, orange juice and sugar are Fairtrade certified.
- Ensuring that 60 per cent of the chocolate product lines stocked in our outlets are Fairtrade certified.
- Ensure all our delivered catering, daily special and banqueting menus reflect the seasons — at least three items per menu will contain ingredients served in the season they are naturally abundant in this country.
- Review and update on an annual basis from March 2021.

**Responsible person(s): head of estates.**

# Commitment 8. More sustainable laboratories

## Scope

Laboratories are some of the most energy and resource intensive areas on site. We aim to reduce these loads in the labs through a series of initiatives, some of which will be led by lab managers and some by BGS Estates. This will be in conjunction with the Laboratory Environmental Awareness Framework (LEAF) initiative, which all laboratory clusters are involved in. LEAF is a standard for sustainable laboratory operations and contains actions on plastic, water, energy and other resources, as well as reducing carbon emissions whilst creating an environment that supports high research quality. As such, this commitment links with several of the other sustainability commitments outlined in this strategy. The LEAF criteria will also act as evidence for changes.

## Aims

- Ensure efficient equipment and laboratory infrastructure with the lowest energy requirements and longest lifespans.
- Reduce consumables used and waste footprint.

## Data required

- Assessment of the quantity of waste produced in each lab, including items such as gloves, wipes, consumable packaging, pipette tips, empty chemical bottles and waste packaging.
- Assessment of key sources of energy use for each lab, including computers, instrumentation, balances and lights.
- Assessment of water usage of each lab.

## Delivery mechanisms

- Identify relevant waste streams, with an emphasis on recycling or re-using where possible, for example plastic collection points where plastics can be rinsed and recycled using on-site recycling bins.
- Investigate zero-waste schemes such as Terracycle, some of which are free and funded by the manufacturers.
- Switch off equipment between uses where possible. Equipment that can be switched off should be highlighted and signage put in place.
- Switch off all lights when not in use and investigate potential for labs to have automatic lighting
- Use ovens and freezers at full capacity to maximise efficiency.
- Investigate and discuss with relevant lab technicians the possibility of centralising chemical purchasing.
- Purchase chemicals in recycled packaging where possible.
- Investigate combining usage of different labs, ensuring this does not raise problems with chemical disposal or dilution.
- Consider environmental impact when procuring consumables or equipment, working with UKSBS procurement services (see Commitment 12). This could include purchasing from companies with good environmental policies and procedures.

## KPIs

- Improvement of LEAF assessment by use of new data from meters to input into carbon cost saving calculators.
- Analysis of LEAF inbuilt calculators to inform on areas where further improvement can be made.
- Encourage staff to engage in LEAF.

- Review performance of LEAF scheme and move to Silver accreditation.

**Responsible person(s): LEAF leads.**

# Commitment 9. More sustainable infrastructure

## Scope

This commitment refers to infrastructure at both BGS sites (Keyworth and Edinburgh), as well as at other sites where appropriate.

## Aims

- Increase renewable energy usage, aiming to use 100% renewable energy by 2040.
- Reduce the environmental impact of our buildings and infrastructure.

## Current measures

BGS Keyworth is now on a green electricity tariff. The electricity currently supplied is backed by certified renewable technologies like solar, wind and biomass, which all have a zero emissions rating.

## Data required

- Condition survey to develop a five-year asset plan for infrastructure improvements:
  - Keyworth 2021–22
  - Edinburgh 2022–23
- Review of infrastructure at other sites to develop suitable KPIs.

## Delivery mechanism

- Develop a roadmap to improve sustainability of our infrastructure.
- Replace natural gas boilers on Keyworth site with a ground-source heat pump.
- Refurbish or replace the main geochemistry building (EIGL-1) with a zero-carbon alternative.
- Install solar power on site.
- Apply for capital funding as opportunities arise.

## KPIs

- Replace natural gas boilers with renewable alternatives.
- Install solar panels.
- Refurbishment and replacement can demonstrate improvements to building sustainability material. Full lifecycle impacts should be considered for refurbishment of buildings.
- Ensure the 2020 condition survey of infrastructure has sustainability built into the justification criteria.
- Use the results of this survey to set a five-year asset plan for infrastructure improvements. Undertake an annual review of subsequent targets.
- The non-half hourly meters that are located at our smaller sites will be switched over to a green tariff.
- Sustainability evidenced in tender process, embedding sustainable infrastructure criteria into all new projects.
- Aim to start new build specifications at zero carbon impact, with tender specifications as close to zero carbon impact as is practicable within operational and financial constraints.
- Passive building environmental efficiency improved through a portfolio of improvements delivered.

**Responsible person(s): head of estates and director of operations.**

# Commitment 10. Climate change adaptation (CCA)

## Scope

Climate adaptation is defined as “managing climate-related risk through adaptation”<sup>2</sup>. In line with the Climate Change Act (2008), UK Climate Change Risk Assessment (CCRA; to be updated July 2021), Greening Governments Commitments and UKRI Sustainability Strategy, UKRI institutes are required to create a climate change adaptation plan which assesses the major risks and opportunities from climate change in the UK. The current six key risk areas for the UK include:

1. Flood risks.
2. Risks from higher temperatures.
3. Risks of water deficits.
4. Risks to natural capital.
5. Risks on food production and trade.
6. New and emerging pests and diseases, including non-native species.

## Aims

- Determine the potential risks and opportunities specific to the BGS sites, operations and scientific outputs (alongside NERC risk assessments).
- Create a Climate Change Adaptation (CCA) plan, in conjunction with NERC.

## Data required

- Determine current risk areas through review of previous incidents of extreme weather using computer aided facilities management system, e.g. areas at risk of flooding or storm damage.
- Monitor internal temperature variabilities across the sites through one year to provide a baseline for fluctuations using a building monitoring system, to determine future requirement.
- Identify key areas which will require specific measures with regards to climate adaptation e.g. library records, laboratory spaces, working environment.
- Abundance and proliferation of non-native/invasive species which may threaten biodiversity and native species protection work.

## Delivery mechanism

- Environmental sustainability group to discuss and identify likely predicted areas which will be most affected by climate change.
- Modelling of BGS sites to assess areas at risk of flooding.
- Include consideration of future climate in the building of new sustainable infrastructure, in line with Commitment 9.
  - For example the requirement for additional air conditioning to keep workspaces, laboratories and archives/repositories climate controlled, in conjunction carbon reduction objectives from Commitments 1, 8 and 11.
  - Apply for capital funding for this infrastructure as opportunities arise.
- Investigate potential for blue-green approaches to infrastructure flood management<sup>3</sup> as part of new infrastructure plans, as well as retrofitting of existing infrastructure.
- Include CCA as part of risk assessments for field work, where adverse and extreme weather both nationally and internationally is likely to impact the duration and timing of field campaigns.

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<sup>2</sup> <https://www.ukclimateresilience.org/>

<sup>3</sup> <http://www.bluegreencities.ac.uk/>

- Consider potential future scientific opportunities that climate change may provide and how BGS sites/operations will manage this as part of CCA.
  - E.g. additional funding availability, increased research into specific research themes.
- Consider CCA in procurement chains, to ensure that extreme weather/adverse climate conditions are not likely to impact supply of raw materials.
- Evaluate risk to internal catering food supplies from changes to domestic and international food production as a result of climate change.
- Monitor and control proliferation of non-native/invasive species.

#### **KPIs**

- Report on flood risk of sites (including major field infrastructure) to assess the need for additional water management and/or flood protection measures.
- Evaluation of requirement for additional air conditioning using model predictions for future UK climate.
  - Assessment of different cooling systems to highlight lower carbon options
- Include CCA plan as part of infrastructure investment planning
- Addition of CCA to field work risk assessment.
- Identify and report on procurement chains and catering supply chains which may be at risk from future climate change.
- Report on current abundance and location of non-native/invasive species to inform future biodiversity management plans.
- Create a CCA plan to be published internally, as well as a “slim” version for a public audience, to be published on the BGS Sustainability website, in conjunction with NERC.

**Responsible person(s): head of estates and director of operations.**

# Commitment 11. Low-carbon working

## Scope

Encourage staff, contractors and visitors at BGS sites to embed environmental sustainability into their ways of working to reduce the carbon footprint of the site. To embed environmental sustainability in research projects and UKRI-aligned activities, from inception to completion. This includes compliance with the amended UKRI grant and training terms and conditions that reflect recognition of UKRI environmental sustainability ambition.

## Aims

- To achieve low-carbon and environmentally sustainable ways of working for staff.
- Improve awareness of carbon footprint of projects.
- Include environmental sustainability assessment at all stages of projects.
- Compliance with UKRI environmental sustainability ambitions.

## Data required

- Identification of the carbon footprint of a range of working patterns, including commuting, via a staff questionnaire.

## Delivery mechanism

- Improving awareness of the carbon footprint of the daily working routine with development of a carbon calculator
- Provision of environmentally sustainable equipment for office and home working with a carbon audit of workspace (sustainability calculator) (also linked to procurement policy commitments).
- Incentives to encourage energy/carbon reduction when travelling to and from work, e.g. encourage public transport use; cycle to work scheme; car sharing; increased use of electric cars or cycles.
- Increased provision of electric vehicle charging points, storage facilities and changing rooms/showers, etc.
- Establish a home working policy that considers environmental sustainability.
- Staff working towards reduced energy consumption/increased efficiency in daily routine and all work areas during their working day, e.g. labs, workshops, fieldwork and home working, etc. (linked to other policies).
- Integrate environmental sustainability in BGS's project initiation process and document for the start of 2021–22 and fully implemented by the close of 2022.
- Develop an evaluation process and tracking tool for research projects to facilitate reporting at regular intervals, dependent on the duration.

## KPIs

- Analysis of working patterns and options.
- Encourage staff to establish personal baseline by use of carbon calculator.
- Establish reduction targets and further delivery mechanisms.
- Publication and implementation of home working, procurement and other relevant policies that take into account environmental sustainability in ways of working.
- Contribution to UKRI's 'sustainability score card'.
- Review performance of schemes and policies.

**Responsible person: director of policy.**

## Commitment 12. More sustainable procurement

### Scope

Ensuring environmental sustainability in all procurement of goods and services through BGS's sustainable procurement strategy. This strategy encompasses our sustainable food strategy (Commitment 7) and is embedded within the sustainable laboratories strategy (Commitment 8), energy (Commitment 1) and IT infrastructure (Commitment 4).

Public sector procurement in the UK is governed by the public contracts regulations (PCR), which provide a legal framework for the inclusion of environmental/sustainability strategies within the public procurement process. The Crown Commercial Service (CCS) produces guidance on the social and environmental aspects of the PCR, including guidance on the flexibility available in relation to environmental criteria throughout the procurement process. Within this framework, BGS recognises its responsibility to carry out its procurement activities in an environmentally and socially responsible manner and we recognise that we need to make long-term commitments to the amount and way we purchase.

BGS has zero tolerance to slavery and human trafficking and will not support or deal with any business or institution that is knowingly involved in modern slavery practices in any part of its operations.

We have a responsibility to procure goods and services in a sustainable way and to develop a strategy for achieving the objectives outlined. The commercial business partner (post currently vacant) will be responsible for actively incorporating the guidelines embedded in this strategy in accordance with the PCR. BGS Estates has overall responsibility for the implementation of the strategy within the services delivered with support from the SSG and commercial business partner.

### Aims

- Ensure environmental sustainability is at the heart of the procurement system through engaging directly with the UKRI and UKSBS commercial business function.
- Drive sustainable innovation within NERC and the wider environmental science community,

### Data required

- Metrics on supply chain.
- Transparency of suppliers/audit.

### Delivery mechanisms

- Initiate the use of sustainable procurement tools with support from UKSBS, to measure and monitor sustainable procurement strategy. There are a range of tools available, and the 'flexible framework' is a public sector-led self-assessment mechanism that facilitates organisations to assess and monitor their progress on sustainable procurement.
- Procurement of new or replacement of existing equipment will include the consideration of environmental impact, to improve sustainability long term. Where possible, items purchased from companies with good environmental policies and procedures should be considered as part of the procurement evaluation.
  - E.g. procurement of low helium mass spectrometers and new liquid nitrogen dispensers with improved efficiency.
- Where possible, improve the sustainability of procurement by avoiding wastage, improving central purchasing and purchasing goods with recyclable packaging.
- Purchase ethical goods wherever there are demonstrable benefits to using them in accordance with legislation and the procurement process. Also take into account the whole costs of goods and services (including energy and water use) and the costs of

managing wider social costs (like pollution impacts, carbon emissions and waste disposal). Strive to use local and regional businesses as part of our supply chain.

- Refer to the Government Buying Standards (GBS), a set of buying standards for public procurers. Aim to achieve 'best practice' within a timeframe, to be reviewed annually.
- Raise awareness of sustainability-led purchasing with all staff. As a minimum, all staff who are active in procurement will be aware of best practice. Training programmes will be developed within the framework of public sector guidelines and legislation. The National Sustainable Public Procurement Programme (NSPPP) offers training programmes.

#### **KPIs**

- Audit/baseline of current state using flexible framework tool and Government buying standards.
- Review of BGS sustainable procurement strategy following appointment of the commercial business partner.
- Produce a report on the sustainable procurement strategy.

**Responsible person(s): commercial business partner and finance director.**

# Commitment 13. Advocacy, awareness and communication

## Scope

To advocate for net zero and create an awareness campaign that not only puts the environmental sustainability strategy at the forefront of the minds of staff, partners and stakeholders, but also inspires staff to improve their environmental sustainability performance and contribute to achieving net zero by 2040. This will be achieved by sharing our strategy through pro-active and engaging external and internal communications.

## Aims

- Raise awareness amongst staff of the environmental sustainability strategy and the corporate commitments and resources to support their delivery.
- Help staff to reduce their carbon footprint by providing education and training and offering decarbonisation initiatives.
- Identify environmental champions at all levels of the business and provide training for them to help drive and support this strategy.
- Embed environmental sustainability into the objectives of *all* staff and utilise good practice and challenge from the environmental sustainability working group
- Work in partnership with local businesses and institutes to create a wider positive impact.
- Promote BGS's portfolio of activities and processes as relevant to the environmental sustainability strategy.

## Data required

- Baseline survey of staff to ascertain awareness and engagement with environmental and sustainable issues.
- Identification of case studies of good practice and achievements.
- Assessment of the target audience for external and internal communications.

## Delivery mechanisms

- Appoint internal environmental champions
- Uphold transparency with regard to sustainable practice at BGS.
- Share sustainability data and reports with NERC (UKRI) as part of annual review, which will be used to update the Environmental Sustainability Strategy.
- Continue to raise profile of the environmental sustainability group within BGS through sharing environmental performance reviews with all staff as a regular part of the internal and external communication calendar.
- Create fact sheets on specific environmental sustainability topics relevant to the workplace and working procedures.
- Arrange a programme of internal events to promote key aims and deliverables of this strategy, including a lunchtime lecture, debate and potentially a day-long workshop for interested parties.
- Seek to establish partnerships with local councils and businesses to promote sustainable practices
  - E.g. collaboration with Rushcliffe Borough Council to support carbon reduction for large businesses
- Publish case studies and blogs of good practice annually and our achievements as news releases on the website.
- Approach media outlets when appropriate with major achievements or stories with news worthy hooks.
- Encourage nominations for the UKRI Environmental Sustainability Awards

- Create resources for public good use, based on internal communications fact sheets

#### **KPIs**

- Send out staff questionnaires to ascertain engagement with environmental and sustainability issues: first questionnaire in June 2021. This will be reissued each year in order to map changing trends, engagement with strategy and evidence of greater staff awareness of environmental sustainability, aligned with desired changes in consumption and behaviours.
- Create a 'slim' version of the strategy to publish on the website for a public audience.
- An agreed-on number of articles published each year.
- Use Google Analytics to evidence increased website traffic to the BGS Environmental Sustainability Strategy and associated articles each year.
- Social media monitoring (#hashtagged) of all communications relating to BGS sustainability work.

**Responsible person: director of communications and external relations.**

# Commitment 14. Reducing the environmental impacts of business travel

## Scope

Business travel refers to travel by employees for work purposes. This includes:

- organising or attending a conference, workshop, meeting or training course
- fieldwork
- business development
- non-home, office-based project work
- offshore work
- work undertaken during a sabbatical period

## Aims

- Reduce the environmental impact of business travel through reduced carbon emissions.
- Set challenging but achievable annual BGS target for reducing business travel-related carbon emissions.

## Data required

- Baseline data of CO<sub>2</sub> emissions for car, train and flights for business travel purposes over the last two 'pre-lockdown' travel years (2017–18 and 2018–19).
- Assessment of the main issues with using these transport modes with relation to CO<sub>2</sub> emissions, e.g. broad terms (continent; country; reason) or detailed terms (project code).
- Comparison with climate emissions for the UK in a global context.
- A pre-Covid-19 baseline on BGS business travel pattern (where; how; why; who pays; carbon footprint). Use this to model operational impact of different travel-related carbon-reduction scenarios. Also use this to establish a realistic business travel-related annual carbon target for BGS.

## Delivery mechanisms

- Provide recommendations for potential CO<sub>2</sub> savings within business travel.
- Provide open and transparent data and information regarding the environmental impact of business travel. Provide clear, upfront information for staff and managers on the footprint of individual travel plans.
- Produce data visualisations showing emissions by transport mode and BGS organisational groups.
- Investigate scenarios to show the impact of various levels of cuts in the overall business travel carbon budget and the impact of selecting different transport modes or adopting behaviour changes.
- Provide recommendations for potential CO<sub>2</sub> savings within business travel.
- Tighten approvals on conference and meeting attendance, including consideration of lower-carbon options.
  - More scrutiny of travel budgets, especially where these come from National Capability where we have more discretion on spend.
- Develop in-year air travel-related carbon accounting system.
- Set a realistic BGS-wide reduction target to achieve measurable cuts in travel-related carbon from BGS, year-on-year, whilst avoiding negative impact on our corporate objectives.

## KPIs

- Harvesting and compilation of 2017–18 and 2018–19 business travel data from contractors and BGS 'permission to attend' forms.

- Develop a model of operational impact.
- Draw up a pilot study for carbon accounting methodology (based on harvesting information from Permission to Travel Authorisations).
- Agree business travel carbon reduction target for FY 2022–23.
- Implement business travel carbon management system.
- Performance review during 2023.

**Responsible person: director of policy.**

## Commitment 15. Cultural change in BGS travel attitudes

### Scope

To successfully implement sustainable development travel practices within BGS, it is critical to implement a shift in the cultural value perception of travel.

### Aim

- Instil a cultural change in BGS attitudes to travel.

### Current measures

- None.

### Data required

- Data and analysis of pre-Covid-19 travel patterns and the associated carbon footprint.

### Delivery mechanisms

- Move away from celebrating where we have visited to celebrating the positive impact we have had, however that has been achieved.
- Show and tell staff about pre-Covid-19 travel patterns. Encourage staff engagement and debate to elicit ideas regarding reduction in business travel carbon footprint.
- Influence staff regarding likely footprint of their future travel decisions.
- Encourage design projects with 'lean' travel plans. Appropriate use of virtual options for participation in science.

### KPIs

- Engagement with staff through webinars/ Q&S
- Extent of reduction in air travel-related emissions post-pandemic. It may take several years to obtain meaningful data.

**Responsible person: director of policy.**