

**Draft Submission by the United Kingdom to
CBD Notification 2018-019**

**Mainstreaming of biodiversity and other strategic actions to enhance
implementation:
request for submission of relevant information**

This response has been prepared by the Joint Nature Conservation Committee (JNCC) in response to notification 2018-109 (SCBD/MCO/AF/ML/GD/86933) mainstreaming of biodiversity and other strategic actions to enhance implementation: request for submission of relevant information. This paper presents information from the United Kingdom regarding:

- case studies and effective practices, guidelines, methodologies, experiences and tools on biodiversity mainstreaming in the sectors of energy and mining, infrastructure, manufacturing and processing, and health. in the relevant sectors, as well as cross-cutting policies (e.g., development plans and budgets);
- examples of laws, policy frameworks, or administrative measures that were introduced or strengthened in order to further the mainstreaming of biodiversity (either aimed at the relevant sectors or that have broad application across sectors);
- lessons learned as well as remaining gaps and challenges associated with biodiversity mainstreaming
- options for addressing these gaps and challenges, and to take further action on biodiversity mainstreaming at the national level; and
- successful models of institutional mechanisms in place at the national level to support implementation of the Strategic Plan 2011-2020.

The case studies featured were drawn from suite of international case studies that have been compiled as part of two business and biodiversity research projects that are currently being conducted by JNCC. These have been supplemented with online literature and case study searches. The case studies and information presented in the paper represent just a selection of case studies produced. Those featured have been chosen based upon the following factors: applicable to the UK; level of relevance to the CBD Secretariat request; clear demonstration that biodiversity is a key driver in influencing business considerations and action; and completeness of the information. The information presented is based upon what is either publicly available, or has been provided by UK businesses for wider dissemination as demonstration of best practice.

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1. Energy and mining

1.1. Case studies

1.1.1. Nature After Minerals Partnership Programme

[NAM is a partnership programme](#), promoting the strategic opportunities for delivering biodiversity benefits through high quality habitat creation on mineral sites. The programme works with mineral planners, industry, statutory bodies, conservation organisations and local communities, to contribute to priority habitat creation and improve priority species populations; while providing places for people to enjoy. [Case study pages](#) showcase examples of good practice in mineral extraction site restoration.

1.1.2. EDF Energy (UK) application of Wildlife Trust Biodiversity Benchmark

EDF Energy is committed through its company [Biodiversity Standard](#) to minimising the impacts of operations on biodiversity and identify opportunities for biodiversity enhancement. A number of EDF's power stations were awarded the [Wildlife Trust's Biodiversity Benchmark](#), a standard used to certify an organisation's systems for achieving continual biodiversity protection and enhancement on its landholdings. The nature of certified sites varies and includes activities that:

- Restore: Proactive management of existing wildlife rich sites and sites of conservation importance;
- Recreate: Establishment of wildlife habitat on land previously used for other purposes; and
- Reconnect: Sites which contribute towards a network of habitats, enhancing the ability for wildlife to traverse landscapes.

The Wildlife Trust's Biodiversity Benchmark can complement existing environmental management systems (e.g. ISO14001) by integrating biodiversity into existing systems of an organisation, or it can operate as a standalone system. Case studies exemplifying actions by EDF can be found in their [corporate sustainability report](#).

1.1.3. Scottish and Southern Electricity Biodiversity Strategy

Scottish and Southern Electricity's (SSE) [Biodiversity Strategy](#) focusses on protecting and enhancing biodiversity, whilst connecting people with the natural world. The company's approach is to actively manage activities to minimise negative impacts and maximise positive ones. Case studies set out in the strategy include *inter alia*:

- On sites containing overhead transmission lines in the Scottish Highlands, SSE undertook a project on the verges of access tracks to restore and create new upland grassland habitat;
- The Conon Hydro Scheme impacted on the migratory pathways for salmon. SSE worked to enhance the production of young salmon by providing 15 miles of extra habitat, enabling adult salmon access to a larger nursery area;
- SSE's Keadby wind farm is situated within arable farmland of relatively low ecological value. A Habitat Management Plan was formulated to maintain and enhance the ecological value of the area for birds, aquatic wildlife and other biological features;
- SSE's Dunmaglass wind farm is situated in a Natural Heritage Zone which is home to Golden Eagle. As part of the Habitat Management Plan, SSE commissioned a Regional Eagle Conservation Management Plan (RECOMP) that will review the status of the local eagle population; and

- SSE's 'Be the Difference' programme is an employee-led programme that enables company staff to employ their skills and time to support community projects, including nature conservation.

1.1.4. Peel Energy - Frodshom Wind Farm

The Frodsham Windfarm site, is one of England's largest onshore generating stations, and one of the [first to receive Biodiversity Benchmark Certification](#). A Habitat Creation Area was developed to improve the existing environment and mitigate habitat lost. A Habitat Management and Creation Group was established to ensure delivery of the sites [Habitat and Management Plan](#) objectives and meets regularly to review progress and identify opportunities for further biodiversity enhancement.

1.2. Sector guidance

The UK's [Joint Statutory Nature Conservation Body Interim Displacement Advice Note](#) provides guidance on how to present assessment information on the extent and potential consequences of seabird displacement from Offshore Wind Farm developments.

[Wind farm development and nature conservation](#) is a guidance document for nature conservation organisations and developers when consulting over wind farm proposals in England.

[Guide to Population Models used in Marine Mammal Impact Assessment](#) is an accessible summary reference guide to marine mammal population modelling for statutory nature conservation body (SNCB) advisers and practitioners dealing with assessments of the potential impacts on marine mammal populations.

[Advisory note prepared by Natural England \(NE\) and JNCC on the iPCoD English Wind Farm Cumulative Assessment](#). Following the development of the interim Population Consequences of Disturbance (iPCoD) model (in February 2013), the UK Statutory Nature Conservation Bodies (SNCBs) produced some key messages to sit alongside any use of the model.

[Statutory nature conservation agency protocol for minimising the risk of injury to marine mammals from piling noise](#) outlines a protocol for the mitigation of potential underwater noise impacts arising from pile driving during offshore wind farm construction.

[Regional Environmental Assessment: A Framework for the Marine Minerals Sector](#) provides guidance / recommendations on a framework for Regional Environmental Assessment's (REA) for the Marine Minerals sector from nature conservation and marine and historic environment perspectives.

[BRE National Solar Centre Biodiversity Guidance](#) provides guidance to planners and the solar industry on how they can support biodiversity on solar farms.

[The Effects of Solar Farms on Local Biodiversity: A Comparative Case Study](#) is a UK solar industry commissioned report that investigates whether solar farms can lead to greater ecological diversity when compared with equivalent undeveloped sites.

[Nature After Minerals: how mineral site restoration can benefit people and wildlife](#)

[Managing Aggregates Sites for Invertebrates – A Best Practice Guide](#)

There is a [2014 reference list containing 267 publications](#) from the UK, EU and internationally, relating to the impacts of energy technologies on biodiversity. These are cited in the literature review carried out as part of the DEFRA study entitled "Towards integration of low carbon energy and biodiversity policies" ([BIO by Deloitte, IEEP and CEH 2014, Project reference WC1012](#)).

[The UK Dairy Biodiversity Roadmap: Commitments for Processors](#) offers a framework to drive sustainability across the length of the dairy supply chain, which includes processors and retailers.

1.3. Policy

The [Clean Growth Strategy](#) states the UK Government's commitment towards cleaner forms of energy, a pledge further supported by the [25 Year Environment Plan](#).

1.4. Tools

Realising nature's value in energy infrastructure through Natural Capital: AECOM and National Grid¹

Considering biodiversity in isolation can often make it challenging to demonstrate why biodiversity is a material consideration for a business. AECOM developed a tool for UK's National Grid to enable the company to assess their landholdings. The tool quantifies natural capital assets; identifies ecosystem services provided; assesses how service provision responds to management scenarios; estimates monetary value of services; and develops a business case for investing in natural capital (including biodiversity).

The tool has been tested on pilot sites, resulting in secured funding for ecosystem restoration projects, managed in collaboration with local Wildlife Trusts. In addition to benefits to biodiversity, site management plans provide a range of services including: improvements in air quality; pollination; community and recreational use values; and carbon storage.

1.5. Challenges and solutions

1.5.1. Impacts of energy policy on Biodiversity in the UK (and overseas)²

Biodiversity impacts are difficult to characterise and quantify depending on the biodiversity components considered (e.g. all taxa or particular species and ecosystems), their conservation status and spatial context (e.g. restricted range and the scale of threat), and the longevity of the impacts.

Energy technologies affect biodiversity in multiple ways, depending on the stages and process of energy production; from extraction of natural resources through to energy conversion and distribution. Impacts of energy technologies can be positive or negative, direct (e.g. mortality, habitat loss and disturbance) and indirect (e.g. through impacts on

¹ An innovative NC and ES accounting tool for landholding bodies. Available at:

http://ec.europa.eu/environment/biodiversity/business/assets/pdf/workstream2/aecom-for-national-grid_en.pdf

² BIO by Deloitte, IEEP and CEH (2014) Towards integration of low carbon energy and biodiversity policies. BIO by Deloitte (BIO), Institute for European Environmental Policy (IEEP) and Centre for Ecology & Hydrology (CEH). Draft final report prepared for Defra, project code WC1012, UK. Available at:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=17823&FromSearch=Y&Publisher=1&SearchText=wc1012%20&SortString=ProjectCode&SortOrder=Asc&Paging=10>

other components of the ecosystem). Impacts often vary spatially and temporally, as the nature, magnitude and duration of impacts on biodiversity is site and context specific. To enable policy decisions account for any potential trade-offs between energy solutions and biodiversity impacts, the UK Department for Business, Energy & Industrial Strategy (formerly the Department of Energy & Climate Change) [2050 Calculator](#), which already provides information about other environmental factors (e.g. land use and air quality), could be adapted to assess potential biodiversity impacts of future energy use and technology development in the UK. This would enable decision makers to select a mixture of technologies to meet the 2050 GHG emission target and obtain (assuming all other pressures on biodiversity remain constant):

- an indication of the number and magnitude of potential negative and positive impacts on a selected sample of habitats and species;
- narrative summaries that indicate the technologies that are expected to result in the greatest ecological impacts, and the biodiversity and ecosystems most likely to be affected; and
- compare baseline impacts, to provide an indication of whether selected future energy technology mixes would have adverse, beneficial, or little impact on particular elements of biodiversity and ecosystems.

Evidence on the impacts of energy technologies on biodiversity is good for many energy technologies. However, impacts of new and emerging technologies are not as well understood or documented (e.g. offshore wind, second generation energy crops, agricultural and forestry residues, tidal stream, wave power, carbon capture and storage, etc.). Potential solutions include:

- focus research on emerging energy technologies, specifically those identified as having potentially high impacts on biodiversity;
- systematically assess mitigation options and monitoring their effectiveness in terms of biodiversity impacts, including levels of success and failure;
- establish better biodiversity impact assessment methods; and
- continually improve predictive models and decision support systems for policy and planning purposes.

Biodiversity impact assessments for relevant biodiversity mainstreaming activities can be improved by:

- expanding to cover a wider range of taxa;
- regularly update sensitivity assessments to incorporate latest evidence of the impact of certain technologies on species and ecosystems;
- update individual energy technology exposure assessments regularly to incorporate the latest baseline data to ensure they remain policy relevant;
- expand to include new and emerging energy technologies that have potentially high impacts, but are not yet well understood;
- revise methods as evidence on the impacts of energy technologies advances;
- incorporate the effects of other impact assessments (i.e. air, water, soil);
- include use of established models (e.g. [wind turbine bird collision model](#));
- further develop modelling capabilities to improve understanding of spatial specificity.
- improve the consideration of indirect land use effects;
- consider wider impacts on ecosystem services and economic valuation; and
- integrate parameters for adaptation capability and mitigation.

1.5.2. 2050 Energy Vision: Meeting the UK's climate targets in harmony with nature

A UK study conducted by the Royal Society for the Protection of Birds (RSPB)³ identified how the different nations and regions of the UK have varying opportunities for renewable energy, due to factors such as: available natural resources, different levels of physical and political constraints; varying ecological sensitivities. The report suggests a step-wise process to consider nature, as follows:

- Step 1: Map where the energy resource is technically viable (e.g. where there is sufficient average wind speed for wind turbines).
- Step 2: Exclude areas with physical constraints that prevent deployment (e.g. buildings, roads and other infrastructure).
- Step 3: Exclude areas where there are policy constraints to deployment (e.g. national heritage designations, military exercise areas).
- Step 4: Exclude areas of high and medium ecological sensitivity (e.g. Natura 2000, ancient woodland habitat).
- Result: Indicative area where energy technology may be located with low ecological risk, based on current understanding and available data.

The study also utilises the UK Government's 2050 Pathways Calculator, and whilst there is no indicated energy scenario preference, as multiple scenarios can be created, it provides an indication as to how biodiversity can be considered in future UK energy policy.

1.5.3. UK Cambridge Conservation Initiative: Biodiversity and the Natural Capital Protocol

The [Natural Capital Protocol](#) is rapidly gaining acceptance as the standard approach for businesses looking to better understand their relationships with nature and the environment. One of the challenges of the natural capital approach, is the effective incorporation of biodiversity. The [UK's Cambridge Conservation Initiative](#), in partnership with the Natural Capital Coalition, are running a project that aims to:

- identify key stakeholders with an interest in addressing biodiversity in natural capital assessments;
- specify the reasons integrating biodiversity into natural capital assessments is challenging, and identify requirements for addressing these;
- generate guidance documents, training and associated products to complement the Natural Capital Protocol; and
- test the proposed solutions and driving change at scale.

Discussions are also underway to ensure biodiversity is similarly represented in government-led assessments of natural capital.

2. Infrastructure

2.1. Case studies

2.1.1. Gatwick Airport

As part of [Section 106 requirements](#) Gatwick Airport developed a [Biodiversity Action Plan \(BAP\)](#) for two key areas of their non-operational greenspace areas which encompass 75 hectares of woodlands, grasslands and wetlands. The BAP is reviewed regularly through Gatwick's [ISO 14001](#) standard for environmental management. The [Gatwick Greenspace](#)

³ The RSPB's 2050 energy vision Meeting the UK's climate targets in harmony with nature. Available at: http://ww2.rspb.org.uk/Images/energy_vision_summary_report_tcm9-419580.pdf

[Partnership](#) conducts regular audits to track and monitor biodiversity-focused actions. Biodiversity conservation forms part of Gatwick Airport's [Decade of Change Commitment](#) and includes various environmental targets to help Gatwick become the UK's most sustainable airport.

In 2016 the airport retained its [Wildlife Trusts' Biodiversity Benchmark Award](#) (an independent verification of Gatwick's biodiversity programme) for the third year running and, for the first time, been awarded a [CIRIA Big Biodiversity Award](#). Gatwick maximizes opportunities for community engagement, with 377 volunteers engaged in 2016.

2.1.2. [Edenbrook Country Park](#)

In 2006 planning permission for 300 homes in Fleet Hampshire were granted alongside a 24-hectare country park which has been delivered by [Berkeley](#) in partnership with Natural England and Hart District Council. A challenge arose whilst plans for Edenbrook were being developed, as the Thames Basin Heaths Special Protection Area was designated in 2005. [A bespoke mitigation strategy](#) was designed that went beyond statutory compliance, whereby a country park was created to reduced visitor pressure on the SPA and create space for biodiversity and recreational opportunities for the local community. Formal guidelines are in place to manage the SPA: [Thames Basin Heaths SPA Delivery Framework](#) (2009) and the [TBH SPA Avoidance Strategy](#) (2017).

2.1.3. [Redrow Homes](#)

[Redrow Homes](#) are developing a '[net gain](#)' approach to biodiversity on their developments as part of their new biodiversity strategy. Redrow commissioned [Atkins](#) to undertake an initial pilot study applying the [DEFRA biodiversity offsetting metric](#) to a sample of existing Redrow development sites. The ecological value of land prior to development was measured and this was compared to the ecological value following development. Of the three sites that were analysed, two of the sites, Caddington and Saxon Brook, had a positive residual value and a biodiversity net gain, whereas the third, Woodford, had an overall net loss after development. At Caddington and Saxon Brook Redrow partnered with RSPB and the Bumblebee Conservation Trust respectively. Redrow are now planning to carry out further work with Atkins, to examine how the remaining phases at Woodford can be altered to achieve an overall net biodiversity gain on the development. As a result of this pilot study Redrow are developing measurable targets to enhance biodiversity on all their developments.

2.1.4. [Bermondsey Dive Under, Network Rail](#)

Network Rail's Thameslink Railways Upgrade has committed to a net positive gain in biodiversity under the Thameslink Delivering Biodiversity Benefits' Policy and Procedure, which saw a 113% net positive increase in biodiversity at the The Bermondsey Dive Under project. The project created a new junction near London Bridge Station, on a site of limited low conservation value, asbestos and hydrocarbon contamination, and invasive Japanese Knotweed. Wildflower corridors were created on railway embankments, as well as 765m² of green walls under arches and access ramps, which contributed to local authority Biodiversity Action Plans. The Bermondsey Dive Under Project received a [CEEQUAL](#) 'Excellent' award of 96.6%.

2.1.5. [M1 Junction 19 Improvement Scheme, Leicestershire](#)

The [M1 Junction 19 Improvement Scheme](#) was a £191 million Highways England project, designed to link major road junctions that supports >142, 000 road users daily. Prior to work beginning, ecological surveys identified nationally important species and habitats to guide

biodiversity net positive project design. The developer Skanska created over 100 new wildlife habitats including grasslands (17.5ha), wetlands (1ha) and woodland plantations (12ha). Interim monitoring assessed effectiveness and showed: Otters (*Lutra lutra*) were using newly created holts; great crested newts were present in the new wetland complex; and bats and birds were utilising over 70% of newly installed nest boxes.

2.2. Sector guidance

[Biodiversity Net Gain: Good practice principles for development](#) is a best practice principle guidance document for the UK construction industry to help deliver net gain within infrastructure development projects.

[CIRIA Guidance documents - Biodiversity indicators for construction projects](#) provides biodiversity indicators that enable measurement of biodiversity impacts of construction projects.

[Delivering biodiversity benefits through green infrastructure](#) provides clear messages about the goals and objectives of GI for the construction industry.

2.3. Policy

The [25 Year Environment Plan](#) sets out the UK Government's commitment to a 'environmental net gain' principle for development. Existing requirements for net gain for biodiversity in national planning policy are to be strengthened and will provide strategic, flexible and locally tailored approaches. Working with the Ministry of Housing, Communities and Local Government, development professionals and interested parties, the range of tools and guidance that support biodiversity net gain approaches are to be expanded, including through the future incorporation of natural capital measures.

Scotland's third [National Planning Framework \(NPF\)](#) defines one of four planning outcomes as delivering a 'natural resilient place'. The policy advocates a broader approach to nature and landscapes, rather than solely conserving designated sites and protected species; recognising the wider values biodiversity and ecosystems provide to area.

Section 11 of [England's National Planning Framework](#) is entitled 'Conserving and enhancing the natural environment'. The National Planning Framework replaces separate 'Planning Policy Statements'.

[Transport and Work Act](#) includes a requirement for an environmental statement for any scheme which is likely to have significant environmental effects.

2.4. Technical standards

British Standards (BS) are standards produced by the [BSI group](#), the UK National Standards Body, which is incorporated under a Royal Charter. BS provide approved codes of practices that give businesses a medium through which productivity and development can be improved, made safer and more sustainable.

[BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations](#)

[BS 42020:2013 Biodiversity. Code of practice for planning and development](#)

[BS 8903 Standard for Sustainable Procurement](#)

[Section 106](#) – part of the [UK Town and Countryside Act 1990](#) is an agreement between a developer and a local planning authority regarding measures a developer must adopt at site level to mitigate the impact(s) of a development project.

BRE's Environmental Assessment Methods (BREEAM) - [BREEAM](#) is an environmental assessment method for buildings and communities. It sets the standard for best practice in sustainable design and measures a building's environmental performance.

2.5. Tools

[Defra Biodiversity Offset Metric](#) is a calculation for measuring biodiversity loss and the amount of mitigation and compensation required to achieve no net loss or net gain.

[Biodiversity Planning Toolkit](#) - developed by the [Association of Local Government Ecologists](#), provides information on statutory regulations, government policy and advice and best practice guidance. The 'interactive landscape' tool enables biodiversity management scenarios and a biodiversity offset calculator.

2.6. Challenges and gaps

Information is lacking as to whether suitable long-term monitoring and management plans are in place post-development. 'Greening' developments will also require significant maintenance, adding to costs.

There are often insufficient resources to enable local authorities to implement an offsetting system and achieve 'no net loss' or 'net positive gain' of biodiversity.

3. Manufacturing and processing

3.1. Case studies

3.1.1. Toyota Manufacturing UK

In 2004 Toyota UK created a Biodiversity Initiative, in partnership with the Derbyshire Wildlife Trust, to protect and enhance the ecological value of their manufacturing site, which sits within a landscape formerly rich in wetland habitats, a major migratory route for birds in England.

In 2009, they became the first corporate partner to join the Trent Valley Initiative, which aims to create a rich diversity of linked wetland habitats along the river providing refuges for migratory species passing through the region. Teams of Toyota employees have been encouraged by the company to become actively involved in an Osprey re-introduction programme close to the site. Further information on how the company is working with nature can be [found on their website](#).

4. Health

4.1. Case studies

4.1.1. NHS Forests / Forth Valley Royal Hospital

[NHS Forests](#) is a project coordinated by the UK's [Centre for Sustainable Healthcare](#) that aims to enable people to access green spaces whilst visiting hospital. One example is the [Forth Valley Royal Hospital in Stirlingshire](#), the largest NHS construction project ever built in Scotland. [Under Section 75](#) requirements (equivalent to Section 106 in England & Wales) developers were required to maintain and enhance the existing natural environment. A fund of £250,000 was designated for on-going management and challenge funding of £100,000 from the Forestry Commission Scotland's programme '[Woods in and Around Towns](#)' was also secured. 40 hectares of mixed woodland that is owned by the hospital is used as a place for improving visitor and patient health and well-being. A Community Ranger works on site 2 days per week, managing the woods, removing invasive species, liaising with community groups and local schools, and delivering the '[Branching Out](#)' programme for [mental health](#) improvement and treatment.

4.1.2. [NHS Greenspace Demonstration Project](#)

In 2007 the [Green Exercise Partnership](#) was established to improve public health through greater public engagement with outdoors physical activity and contact with nature. Since 2010, the GEP has coordinated the [NHS Greenspace Demonstration Project](#) which:

- Brought underused land in existing healthcare facilities into active use to provide therapeutic gardens, growing places, outdoor gyms, woodland walks, and green infrastructure links.
- Promoted greenspace planning and design for new healthcare buildings.

4.1.3. [Tiverton Hospital Wildlife Garden](#)

[Tiverton Hospital](#) made small-scale changes to their limited surrounding greenspace. With ~£2,000 for native planting, and the installation nest boxes, the green space has become markedly richer in biodiversity is described as a 'healing garden', helping patients to destress and improving the recovery process.

4.2. Policy and guidance

[Greenspace design for health and wellbeing](#), produced by the Forestry Commission, sets out best practice guidelines for the design of accessible outdoor healing environments.

[Public Health England Spatial Planning for Health: An evidence resource for planning and designing healthier places](#) provides a series of practical diagrams illustrating the linkages, and strength of evidence, between spatial planning and health based on the findings from an umbrella literature review of the impacts of the built environment on health.

4.3. Challenges and gaps

While many UK companies in the biotechnology and pharmaceutical industries report on actions and engagement in biodiversity protection, further analysis is required to identify formal case studies. Best practice guidelines and examples on assessing biodiversity risks, dependencies and opportunities associated with these industries value chains could be developed.

Green initiatives could be strengthened by placing equal weight on biodiversity benefits *and* health benefits. Current focus in the UK appears to be increasing visibility of green spaces to bring the '*outside inside*' or improve patient recovery through connections with nature.

There is often little information on management plans or funds allocated to maintain the health and biodiversity benefits for NHS sites in the long-term.

