



Department for
Energy Security
& Net Zero

Department for Energy Security & Net Zero

Energy National Policy Statements

Appraisal of Sustainability - Appendices
Supporting Evidence Volume I



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Appendix A. Glossary

Table A-1 - List of Abbreviations

Abbreviation	Term
ALC	Agricultural Land Classification
AONB	Area of Outstanding Natural Beauty
AoS	Appraisal of Sustainability
AQMA	Air Quality Management Area
BAP	Biodiversity Action Plan
BAT	Best Available Techniques
BCCUS	Bioenergy with Carbon Capture Usage and Storage
BEIS	Department for Business, Energy and Industrial Strategy
BIM	Building Information Management
BMV	Best and Most Versatile
BNG	Biodiversity Net Gain
CCA	Climate Change Act
CCC	Climate Change Committee
CCR	Carbon Capture Ready
CCS	Carbon Capture and Storage
CCUS	Carbon Capture Usage and Storage
CfD	Contracts for Difference
CHP	Combined Heat and Power
CO2	Carbon Dioxide
CNP	Critical National Priority
CPS	Carbon Price Support
DCO	Development Consent Order

DECC	Department for Energy and Climate Change
Defra	Department for Environment, Farming and Rural Affairs
DfT	Department for Transport
DTI	Department for Trade and Industry
DWSZ	Drinking Water Safeguard Zone
EA	Environment Agency
EIA	Environmental Impact Assessment
EfW	Energy from Waste
EMF	Electro-Magnetic Field
EP	Environmental Permitting
EPR	Environmental Permitting Regulations
EPS	Emissions Performance Standards
EQLS	European Quality of Life Survey
ES	Environmental Statement
ETS	Emission Trading Scheme
EU	European Union
FCERM	Flood and Coastal Erosion Risk Management
FRA	Flood Risk Assessment
GHG	Greenhouse Gas
GVA	Gross Value Added
GW	Giga Watt
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
HIA	Health Impact Assessment
HMT	HM Treasury

HRA	Habitats Regulation Assessment
IED	Industrial Emissions Directive
IPCC	Intergovernmental Panel on Climate Change
kV	Kilo Volt
kWh	Kilo Watt hour
LDD	Local Development Document
LNG	Liquefied Natural Gas
LNR	Local Nature Reserve
LVIA	Landscape and Visual Impact Assessment
LWS	Local Wildlife Site
Mcm	Million standard cubic metres
MMO	Marine Management Organisation
MNR	Marine Nature Reserves
MPA	Marine Protected Area
MSFD	Marine Strategy Framework Directive
MW	Mega Watt
MWe	Mega Watt equivalent
NDC	Nationally Determined Contribution
NE	Natural England
NGCC	Natural Gas Combined Cycle
NMVOC	Non-Methane Volatile Organic Compound
NNR	National Nature Reserves
NOx	Nitrogen Oxides
NPPF	National Planning Policy Framework
NPPG	National Planning Policy Guidance

NPS	National Policy Statement
NRW	Natural Resource Wales
NSIP	Nationally Significant Infrastructure Project
NVZ	Nitrate Vulnerable Zone
NZ	Net Zero
ODPM	Office of the Deputy Prime Minister
OECD	Organisation for Economic Co-operation and Development
PPP	Plans, Policies and Programmes
PV	Photovoltaic
RBD	River Basin District
RBMP	River Basin Management Plan
RO	Renewables Obligation
SA	Sustainability Appraisal
SAC	Special Areas of Conservation
SAM	Scheduled Ancient Monument
SCI	Sites of Community Importance
SCR	Selective Catalytic Reduction
SEA	Strategic Environmental Assessment
SF6	Sulphur Hexafluoride
SLVIA	Seascape and Landscape Visual Impact Assessment
SNCI	Site Nature Conservation Interest
SO2	Sulphur Dioxide
SPA	Special Protection Area
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest

SuDS	Sustainable Drainage Systems
TAN	Technical Advice Note
UK	United Kingdom
UKCIP	UK Climate Impacts Programme
UKETS	UK Emissions Trading Scheme
WFD	Water Framework Directive
WfH	Waste from Households
WHS	World Heritage Site

Table A-2 - Glossary of Terms

Term	Explanation
Climate change adaptation and resilience	Adaptation is about taking steps to live with the effects of climate change such as building quay walls and flood barriers. Resilience is the ability of a system to adsorb and bounce back after an adverse event.
Carbon capture and storage (CCS) or Carbon Capture, Usage and Storage (CCUS)	A process by which the CO ₂ produced in the combustion of fossil fuels is captured and transported to a storage location and isolated from the atmosphere. Capture of CO ₂ can be applied to large emission sources like power plants used for electricity generation, production of hydrogen from methane reforming and industrial processes. The CO ₂ is then compressed and transported for long term storage in geological formations or for use in industrial processes.
Critical National Priority	<p>Government has concluded that there is a critical national priority (CNP) for the provision of new nationally significant low carbon infrastructure, which is defined as:</p> <ul style="list-style-type: none"> • for electricity generation, all onshore and offshore generation that does not involve fossil fuel combustion (that is, renewable generation, including energy from waste where that is predominantly renewable; and nuclear generation), as well as fossil-fuel fired generation in scope of EN-2 which is carbon capture ready. • for electricity grid infrastructure, all power lines in scope of EN-3 and EN-5 including network reinforcement and upgrade works. This is not limited to those associated specifically with a particular technology, because all new grid projects have a role in efficiently constructing, operating and connecting low carbon infrastructure to the National Electricity Transmission System. • for other energy infrastructure, technologies, fuels, pipelines and storage infrastructure which fits within the normal definition of “low carbon”, such as hydrogen distribution, and carbon dioxide distribution. • Lifetime extensions of nationally significant low carbon infrastructure, and repowering of projects, are also CNP infrastructure.
Natural Gas with CCS (Abated Carbon)	Natural gas combined-cycle (NGCC) turbines with carbon capture and storage (CCS) are a promising technology for reducing carbon dioxide (CO ₂) emissions in the electricity sector.
Green Hydrogen	Hydrogen produced via electrolysis using zero carbon electricity.
Hydrogen with CCS (Blue Hydrogen)	Hydrogen created via methane reforming using natural gas as an input, plus CCUS. Not all hydrogen production methods are zero

	<p>carbon. Some will rely on carbon capture, or being offset against negative emissions, to deliver a net zero outcome.</p> <p>While it is unlikely to be a major contributor to total annual electricity production, its role as a source of zero carbon flexibility and peaking plant will be particularly important.</p> <p>Hydrogen electrolyzers can support integration of renewable generation. When paired with hydrogen storage and power generation, they can also provide seasonal flexibility which is important for whole system planning.</p>
Long-duration Energy Storage	<p>Battery storage technologies are essential to speeding up the replacement of fossil fuels with renewable energy. Battery storage systems will play an increasingly pivotal role between green energy supplies and responding to electricity demands. Larger, longer duration storage will be needed to support decarbonisation.</p> <p>Batteries make up most of the network connected capacity, however these typically have lower storage volumes, so large-scale technologies such as pumped hydro and compressed air provide more of the total volume of stored energy.</p> <p>Electricity storage is often co-located with wind or solar generation but can also be deployed in the transmission network and in the distribution network near load centres.</p>
Bioenergy with CCUS	<p>The coupling of bioenergy with carbon capture and storage to capture the CO₂ produced during combustion.</p> <p>Bioenergy has an important role in decarbonising our energy system and wider economy when combined with carbon capture, usage and storage (BCCUS) to deliver negative emissions.</p>
Nuclear	<p>Nuclear power is the use of nuclear reactions to produce electricity. Nuclear power can be obtained from nuclear fission, nuclear decay and nuclear fusion reactions. Presently, the vast majority of electricity from nuclear power is produced by nuclear fission of uranium and plutonium in nuclear power plants.</p> <p>Along with natural gas with CCUS needed to provide resilience during extended periods of low wind and solar irradiation. Nuclear, alongside other technologies could also offer broader system benefits, such as clean hydrogen production or low carbon heat</p>
Unabated gas	<p>Gas power stations that have not been fitted with carbon capture and storage technology to address carbon emissions</p>

Appendix B. Response to Consultations

B.1. Response to Scoping Report Consultation

Table B-1 - Overview of comments

Consultee	Comments	Response
CADW	<p>Cadw have identified the following additional documents/ conventions should be included in the above. They are:</p> <p>International</p> <ul style="list-style-type: none"> • Convention on the Protection of Underwater Cultural Heritage (2001) - the energy ENS includes off-shore windfarms Council of Europe, European Convention on the Protection of the Archaeological Heritage 1992, the 'Valetta Convention' • Council of Europe, European Landscape Convention 2000 <p>UK</p> <ul style="list-style-type: none"> • Protection of Military Remains Act 1986 • National Heritage Act 2002 • Marine and Coastal Access Act 2009 <p>Wales</p> <ul style="list-style-type: none"> • Historic Environment Act (Wales) 2016 • Future Wales The National Plan 2040 	<p>Additional documents noted and added to the review of Plans and Policies – no additional AoS Themes identified and considered that amendments to AoS Framework are not required</p>
Dept. Agriculture Environment and Rural Affairs (DAERA) – Northern Ireland Environment Agency	<p>DAERA would like the Environmental Report and HRA to contain a statement indicating the opinion on whether or not the implementation of the Strategy is likely to have a significant effect on Northern Ireland, in combination with any identified measures envisaged to prevent, reduce and as fully possible offset any significant adverse effects on the environment.</p> <p>It is noted that the Energy NPS does not apply in Northern Ireland.</p> <p>NED are content with the approach to the both the Appraisal of Sustainability and HRA methodology outlined within the documents provided. The SEA and HRA should consider all potential impacts including those which may impact Northern Ireland both directly and indirectly. Consideration should be given to potential impacts on habitats (particularly designated sites,</p>	<p>Noted for information – the NPS does not apply to Northern Ireland</p>

Consultee	Comments	Response
	<p>priority habitats and those important for migratory species and NI populations) including habitat quality and conservation status. It is important that the SEA should also consider potential/perceived impacts on NI populations including those which frequent/reside in NI or NI waters, migratory species and those that may be selection features of designated sites e.g. overwintering birds within SPAs.</p> <p>Comments from Drinking Water Inspectorate are noted but relate to if NPS was to be implemented in Northern Ireland.</p> <p>Note made that the UK Fisheries Act 2020 should be referenced and notes that this Act states: “the marine and aquatic environment includes— (a) the natural beauty or amenity of marine or coastal areas, or of inland waters or waterside areas, (b) features of archaeological or historic interest in those areas, and (c) flora and fauna which are dependent on, or associated with, a marine or coastal, or aquatic or waterside, environment;”</p> <p>Note is made of the potential for climate change to lead to coastal process changes.</p> <p>Note is made by Historic Environment Division and Inland Fisheries that the NPS does not apply to Northern Ireland and as such no significant adverse effects are anticipated.</p>	
Environment Agency	<p>Range of additional Plans and Programmes suggested for inclusion / consideration.</p> <p>Range of additional aspects suggested for inclusion to baseline data:</p> <p>Recommendation that coastal change is identified as a category in Table 5-1</p> <p>Greenhouse gas emissions– in addition to seeking to achieve UK net zero target, should also seek to promote renewable and low carbon energy generation and discourage high carbon/fossil fuel energy generation in line with UK policy (e.g. in Decarbonisation Strategy or Net Zero Strategy).</p> <p>Table 5-1 – Greenhouse Gas emissions – the document doesn’t mention the need for negative carbon emissions to offset residual emissions from energy. It should recognise the growing role for Bioenergy with Carbon Capture & Storage (BECCS), including the new opportunities and risks that brings. In addition, it doesn’t explicitly mention Nature Based Solutions (NBS) as a means to achieve negative emissions by biological sequestration. NBS offer opportunities for energy sectors to achieve Net Zero if they are incorporated into the Emissions Trading Scheme,</p>	<p>Additional documents noted and added to the review of Plans and Policies – no additional AoS Themes identified and considered that amendments to AoS Framework are not required</p>

Consultee	Comments	Response
	<p>and their deployment offers both co-benefits and potentially risks to the environment. It does mention Green Infrastructure and tree planting elsewhere in the document, but it should recognise NBS's cover more than just tree planting. They include peat restoration, marine, saltmarsh, soils, floodplains etc. Also, the AoS target should include Net Zero 2050 AND interim Carbon Budget and Paris Agreement NDC targets as these are legally binding.</p> <p>Table 5-1 – Adaptation to a changing climate – refer to impact of climate change on water availability/drought/low river flows (referring to UK Climate Change Projections to quantify impacts). Refer to 'flood risk assessments: climate change allowances' to quantify impact of climate change on sea level rise, storm surge, wind speed and wave height, peak rainfall and peak river flow. Refer to UK Climate Change Projections to quantify impact of climate change on peak temperatures. Include a more specific target aiming for resilience to a 4oC increase by 2100 (in line with EA ambition).</p> <p>Table 5-1 – Water environment – refer to impact of climate change periods of low rainfall reducing water availability for the energy sector but also for rivers the energy sector may use to obtain and discharge cooling water. Cooling waters from existing technologies (fossil fuel combustion, nuclear) and future energy technologies (hydrogen, carbon capture) pose a risk to river and estuary environments that are already heating through climate change. Heat is a water quality issue and new energy infrastructure will need to address it. Refer to the impact of increase rainfall intensity and increase risk of combined sewer overflow spills and diffuse run off increasing water pollution and reducing environmental capacity of water courses to accommodate wastewater discharges from the energy sector. Include a more specific target to plan for how the impact of CC could affect water resources (in the context of a 4oC increase by 2100) available for the energy sector. Availability of water may be a constraining factor in location of energy infrastructure.</p> <p>We recommend that 'water' is subcategorised into water quality, water resources, and flood risk.</p> <p>Table 5-1 – Air Quality – should recognise that energy technologies of the future bring new risks. For example, biomass combustion can lead to air quality issues. Carbon Capture technologies use solvents that can be released to air and are a risk to human health.</p> <p>Table 5-1 – Resources & Waste – The NPS should see waste as a source of emissions, and potentially a source of low-carbon energy – where it cannot be otherwise reduced or recovered.</p>	

Consultee	Comments	Response
	<p>Other issues – Waste heat doesn't appear to be covered. Perhaps it should explicitly feature in the GHG or Waste & Resources sections. Waste heat energy in the form of emissions to air and water represent harm without benefit and should be minimised through this Energy NPS.</p> <p>Other issues – Soil is considered but increasingly sub-surface needs to be a consideration in energy. It is an energy source (ground source heat pumps, minewater heat, geothermal energy) and a heat or resource store (hydrogen). There are opportunities for low carbon energy and risks to water of such approaches, including cumulative impacts on groundwaters.</p>	
	<p>No. of recommendations on AoS Objectives and Guide Questions:</p> <p>3.3.3 bullet 2 states "maximise the use of renewable energy". This should be amended to read "maximise the use of low carbon (or renewable and low carbon) energy".</p> <p>3.3.3 – consider including something on maximising opportunities for making use of waste heat. We would recommend that a line on supporting sustainable construction techniques be included to reduce the carbon emissions associated with construction due to concrete production and temporary power generation. Perhaps this is best added to section 3.3.3.</p> <p>3.3.4 bullet 2 should be amended to read "Minimise the risk and impact of flooding from all sources for the lifetime of the development"</p> <p>3.3.4 bullet 3 should be changed from "Avoid development in floodplains when possible" should be changed to "Avoid development in flood risk areas (whether existing or future) when possible" to reflect all sources of flooding and the impacts of climate change.</p> <p>3.3.4 bullet 4 should better reflect the National FCERM Strategy which contains the objective – "Today's growth and infrastructure – resilient to tomorrow's climate"</p> <p>3.3.4 bullet 5 'Utilise natural flood management' should be expanded to say 'including the use of approaches such as multifunctional sustainable drainage systems and river restoration'.</p> <p>3.3.4 – Add a new bullet to 'Avoid development in areas likely to be affected by coastal erosion or where this is not possible ensure that coastal change can be managed throughout the lifetime of the development' should be added as an objective.</p> <p>3.3.4 – In line with the NPPF we suggest the addition of a new objective - 'Safeguard land from development that is required, or likely to be required, for current or future flood management'.</p>	<p>Recommendations reviewed and AoS Framework updated as considered appropriate</p>

Consultee	Comments	Response
	<p>3.3.4 The objectives should better reflect those contained in paragraph 150 of the NPPF. i.e. development should avoid increased vulnerability to the range of climate change impacts; ensure development is resilient and adaptable; help reduce greenhouse gas emissions.</p> <p>3.3.4 – Acknowledging that some existing infrastructure may be in unsustainable locations due to climate change, and may need relocating, we suggest the addition of a new objective in line with para 157(d) of the NPPF – ‘Where climate change is expected to increase flood risk so that existing infrastructure may not be sustainable in the long-term, seeking opportunities to relocate it to more sustainable locations.’</p> <p>3.3.4 This should contain something specifically on other future climate and weather risks such as extreme temperatures, increased storminess, air quality and drought/limited water availability/low river flows.</p> <p>3.3.4 In line with the National FCERM Strategy, there should be something on ensuring infrastructure provider investments are resilient to climate change.</p> <p>3.3.5 – include an objective to reduce ammonia emissions.</p> <p>3.3.6 – amend bullet 1 to read “Protect and improve ‘the quantity’ and quality of ground and surface water”. Does this include seawater quality where we also have international obligations e.g. under OSAPR?</p> <p>3.3.10 – add an addition bullet to read “Apply the waste hierarchy”.</p> <p>3.5. In line with the National FCERM Strategy ‘Creating a nation of climate champions’ should be added to the list of social objectives.</p> <p>Table 6-1 – it is unclear why only sites of international importance are referenced in the AoS Framework for Energy NPS No. 4. We suggest that this also includes national sites of importance, such as SSSI’s and Marine Conservation Zones.</p> <p>Table 6-1 No. 4 Guide Questions - The tests within the HRA are not just about avoiding the loss of sites of international importance. The guide questions should reflect this to make it clear.</p> <p>Table 6-1 – Maximise adaptation and resilience to climate change – The guide questions could be made clearer using plain English and are a bit repetitive. There should be a question about assessment of climate risks ‘Will the NPS...Promote assessment of the impact of climate change on flood risk, water resources, extreme temperatures and storminess’; ‘Promote</p>	

Consultee	Comments	Response
	<p>assessment of a range of climate change to inform design of infrastructure that is resilient to the upper end of the range of likely climate change'; 'Promote assessment of credible maximum climate change scenario to ensure resilience of safety critical elements of infrastructure'. Also there is no reference to the impact of climate change on water availability / drought / low river flows – either cover in this section or in 'Protect and enhance the water environment'.</p> <p>Table 6-1 - Maximise adaptation and resilience to climate change – guide questions</p> <ul style="list-style-type: none"> • Not sure what 'Address the climate induced risks of cascading failures from interdependent infrastructure energy networks?' means – perhaps worth making it clearer with an example? • Amend fourth bullet to read "Lead to major infrastructure development that is flood resilient over its lifetime, considering the effects of climate change, without increasing the flood risk elsewhere and identifying opportunities to reduce flood risk overall?" • Seventh bullet appears superfluous as "Ensure provision of appropriate compensatory measures is in place when there is no other option to land take from areas of flood plain?" more or less repeats the meaning of "not increasing flood risk elsewhere" 	
	<p>EA also note that there are a number of important changes on the horizon that the AoS should consider. It clearly can't assess them in full until such time as they're implemented, but, by considering their potential implications, it may help to future-proof the NPSs and the AoS. For example:</p> <ul style="list-style-type: none"> • The Environment Bill – particularly in relation to biodiversity net gain mandate • The planning white paper – Planning for the Future and the potential reforms it may introduce • Project Speed – and the potential reforms it may introduce <p>There appears to be some inconsistency within the document in that reference is made to the Conservation of Habitats and Species Regulations 2017, but also to the Conservation of Habitats and Species Regulations 2010 as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.</p> <p>It is unclear how the AoS and HRA will be applied to any future NPS for new nuclear power developments for deployment beyond the window specified in EN6. As EN6 is unlikely to be applied again will it be deemed as out of scope in the context of AoS and HRA?</p>	<p>Additional documents noted and added to the review of Plans and Policies – no additional AoS Themes identified and considered that amendments to AoS Framework are not required</p>

Consultee	Comments	Response
	<ul style="list-style-type: none"> - There are other 'nature-based solutions' for adaptation and mitigating climate change impacts. For example, peatland restoration, appropriate tree planting, green infrastructure including in urban environments <ul style="list-style-type: none"> ▪ The largest carbon sequestration rates amongst semi-natural habitats are in woodlands ▪ Peatlands are the largest stores of carbon, and when in a healthy condition they sequester carbon indefinitely - Restoring both upland and lowland peatlands to a natural condition is a top priority if we are to reach our net zero emissions targets. ▪ Marine and coastal habitats have the potential to sequester and store large amounts of carbon. ▪ https://www.gov.uk/government/news/new-major-study-shows-importance-of-nature-in-hitting-net-zero ▪ Carbon Storage and Sequestration by Habitat 2021 (NERR094) http://publications.naturalengland.org.uk/publication/5419124441481216 ▪ climate change adaptation manual http://publications.naturalengland.org.uk/publication/5679197848862720 - Agree with the comments made here on climate change and the need to include nature based solutions - I would also add that species adaptation to climate change should be considered, both as a pressure and mitigation opportunity http://publications.naturalengland.org.uk/publication/5679197848862720 • 3.3.5 Air Quality <ul style="list-style-type: none"> - Only references human health initiatives - needs cross-reference to impacts on the environment and biodiversity 3.3.1 • 3.3.7 Land Use, Soil and Agriculture <ul style="list-style-type: none"> - In addition to the bullets listed in the report: <ul style="list-style-type: none"> ▪ ensure soils are sustainably managed (applies to all land uses including land being developed and in urban uses) ▪ improve soil health ▪ restore & protect peatlands ▪ zero avoidable waste by 2050 (including treating soil as a resource not a waste) 	

Consultee	Comments	Response
	<ul style="list-style-type: none"> - <i>'particularly those of the best value'</i> i.e. Best and Most Versatile (BMV) agricultural land - <i>'Change agricultural land use to forestry'</i> - This contradicts the previous point - I think that this needs to be rewritten to "Create new forestry to address climate change, drainage, soils protection, biodiversity and recreational benefits". <ul style="list-style-type: none"> • 3.3.9 Landscapes and Townscapes <ul style="list-style-type: none"> - <i>'Protect those areas designated for landscape value'</i> - Replace with "Afford the highest level of protection to nationally designated landscapes. Seek to protect and enhance designated landscapes.", to achieve better alignment with NPPF stated objectives. With a particular emphasis on conserving and enhancing the natural beauty of national parks and AONBs, and those stretches of coastline given the status of Heritage Coast. • 3.3.10 Natural Resources and Waste <ul style="list-style-type: none"> - <i>'Use secondary and recycled materials'</i> - Should mention the waste hierarchy from the Government's waste strategy. - <i>'Consider opportunities to maximise on-site re-use of materials'</i> - including soils <p>Comments from section 3.5 Social Themes:</p> <ul style="list-style-type: none"> • 3.5.1 Health & Community Themes <ul style="list-style-type: none"> - <i>'Promote healthy lifestyles through exercise, physically active travel and access to good quality and affordable food, which can assist in reducing both physical and mental illnesses'</i> - For health and wellbeing. Create outdoor recreational opportunities to promote a healthy lifestyle. See people and nature surveys including this most recent one https://www.gov.uk/government/statistics/the-people-and-nature-survey-for-england-monthly-interim-indicators-for-january-2021-experimental-statistics <p>Comments from 'Table 4-1 Summary of national baseline information'</p> <ul style="list-style-type: none"> • Climate Change <ul style="list-style-type: none"> - Adaptation of species to a changing climate • Biodiversity <ul style="list-style-type: none"> - Baseline information exists nationally for the location of Local Nature Reserves - Nature Recovery Network • Health and Well-being 	

Consultee	Comments	Response
	<ul style="list-style-type: none"> - England Coast Path should be included with National Trails • Landscape, Townscape, and Seascape <ul style="list-style-type: none"> - Add Landscape Character Assessments (produced for areas in England with all National Parks and AONBs certainly having a LCA) • Air Quality <ul style="list-style-type: none"> - Add Air Pollution Information System for assessment of ecological receptors http://www.apis.ac.uk/ • Soils, Geology and Land Use <ul style="list-style-type: none"> - Agriculture Land Classification; and Soil Associations (LandIS NATMAP) - Strategic scale (1:250,000) Agricultural Land Classification (ALC) mapping is available used as an aid in the planning process and for decision making. - The purpose of ALC was to map the agricultural land quality across E&W to a common standard, to ensure scarce, high quality land could be protected from loss to development through the planning system. - The best agricultural land (Best and Most Versatile) has greater protection than non-BMV land. - In England, a map assigning the likelihood of BMV agricultural land has been created as a companion to the Provisional ALC maps. - Soil mapping & Peat Mapping - The National Soil Map is available at a scale of 1:250,000 and shows the Soil Associations, including peat and peaty soil associations. - More detailed mapping is normally required to assess individual proposals. This is determined through detailed ALC site survey • Water Quality and Resources <ul style="list-style-type: none"> - River Basin Management Plans <p>Comments on 'Table 4-2 Key designations and land use across the UK':</p> <ul style="list-style-type: none"> • Figure 4: Landscape / Health and Wellbeing <ul style="list-style-type: none"> - spelling - Trails 	

Consultee	Comments	Response
	<ul style="list-style-type: none"> - Also include England Coast Path in baseline maps <p>Comments on Section 4.3 Data Collection Methodology:</p> <ul style="list-style-type: none"> • <i>'Have there been, or will there be, any significant cumulative or synergistic effects over time?'</i> <p>- Need to put parameters around what cumulative effects should be in scope - see PINS Advice Note 17 for a useful guide https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/12/Advice-note-17V4.pdf</p> <p>Comments on section 4.4.1 Environmental Data:</p> <ul style="list-style-type: none"> • <i>'Soil / land classification, including Best and Most Versatile'</i> - No relevant discussion in Appendix B. Rename to: Soils and Agricultural Land Classification, including Best and Most Versatile <p>Comments on section 5.2 Summary of key sustainability issues, implications and opportunities for the NPS</p> <ul style="list-style-type: none"> • Welcome the inclusion of opportunities as effects can also be positive as well as negative • The report should note that there is a requirement to consider cumulative and in-combination effects. The scoping report could identify which of these are 'significant' and so warrant further investigation. • The environmental report needs to include an assessment of cumulative effects. Potential effects we would welcome consideration of through the process include those relating to landscape around associated development (such as overhead lines and pylons) and existing development <p>Comments on Table 5-1 Key Issues and Opportunities</p> <ul style="list-style-type: none"> • <i>'...but wider green infrastructure can benefit from opportunities to deliver Biodiversity Net Gain through new development'</i> - The impacts on biodiversity and the issues acting upon it, will often be different to the impacts on Green Infrastructure. These need to be separated out and the evolution of the baseline should address both independently. Slightly confusing sentence - I think it also would benefit from the inclusion in this section to reference to the Nature Recovery Network and Local Nature Recovery Strategies • <i>'...however, this is unlikely to prevent some decline in condition due to the effects of climate change'</i> - Not just due to the impacts of climate change, but due to ongoing air/water pollution etc may also lead to a degradation of habitat quality 	

Consultee	Comments	Response
	<ul style="list-style-type: none"> • <i>‘Much of the green infrastructure network is not designated...’</i> - It is unclear what is meant by the green infrastructure network? Is this a reference to green infrastructure or about the Nature Recovery Network etc? Also useful to reference the Green Infrastructure Standards being developed as part of the 25 YEP - the Framework of Green Infrastructure Standards will be launched in 2022. The GIST framework will set out a menu of standards around the how and why to do good green infrastructure, as well as for the quantity, quality and functionality of green infrastructure. There will be guidance on How to design – an evidence-based GI design guide linked to the National Model Design Code • <i>‘Where this is not possible, there should be mitigation and compensation for losses.’</i> - Should follow the mitigation hierarchy - see the NPPF • <i>‘...and identify appropriate avoidance and mitigation measures early in the development of the NPS.’</i> - Worth noting that in the case of offshore wind some sites are already at environmental limits of development • <i>‘...e.g. through the use of appropriate locally native species in landscaping plans’</i> - https://www.gov.uk/government/news/new-major-study-shows-importance-of-nature-in-hitting-net-zero. A better example would be contributing to the Local Nature Recovery Strategy. • <i>‘The potential for biodiversity creation in brownfield sites should be also taken into account’</i> - Some brownfield sites will be protected in their own right or of high biodiversity value so there needs to be caution here. • <i>‘avoid the fragmentation of green infrastructure, by...’</i> - do you mean fragmentation of habitat? • <i>‘...green infrastructure network to contribute to protecting natural habitats and...’</i> - Do you mean the Nature Recovery Network? • <i>‘This network is highly susceptible to impacts from development including:..’</i> - Nature Recovery Network and its objectives should be included for consideration. <i>‘...this has resulted in the need for new development to deliver Biodiversity Net Gain’</i> - Protected species including European Protected Species seems to have been omitted from this consideration – including District Level Licensing for great crested newts. There may already be strategic approaches both protected species strategies and protected site 	

Consultee	Comments	Response
	<p>strategies where these proposals could play a significant role? There is reference in the Environment Bill to protected site and species strategies</p> <ul style="list-style-type: none"> • See comment at 3.3.4 • The implications of the biodiversity targets within the Environment Bill should be considered on the objectives of the NPS • Would be helpful to mention the NIC design principles, design champions, design codes and principles described in Dasgupta about biodiversity as an asset • <i>'...linked with atmospheric warming and global climate change.'</i> - peatlands in an unfavorable condition • <i>'...NPS are contributing to decarbonisation of energy networks'</i> - This is a bit of an oversimplification. The choices made for new energy infrastructure e.g. location, transport, the options for carbon capture and storage and for natural sequestration through peatland restoration and forestry planting should be considered in terms of the potential to address Net Zero. Although the UK has met the first three CCC carbon budgets, it is not in line to meet the longer term budgets or the net zero commitment, the NPS should seek to direct energy policy and the creation of new energy infrastructure, in a way that will contribute to these budgets. • <i>'...the future supply of electricity as decarbonisation continues across all sectors'</i> - consideration of soil carbon and the sustainable use of soil resources • <i>'...by absorbing increased amounts of CO2 from the atmosphere.'</i> - careful site location also • Peat restoration • <i>'...NPS can drive a strategic response to health stressors associated with climate change'</i> - There are multiple benefits associated with managing land and soils sustainably, including minimising adverse soil impacts; improving soil health, increased resilience to climate change (e.g. storing carbon and reducing flood risk) • See references at 3.3.4 re nature-based solutions • <i>'Enhance biodiversity, promote ecosystem resilience and functionality and achieve Biodiversity Net Gain'</i> (Pg 28) - Add a reference in here around nature-based solutions 	

Consultee	Comments	Response
	<ul style="list-style-type: none"> • <i>'...which can both help to manage localised flood risk and simultaneously create new habitats'</i> - see 3.3.4 which describes the habitats in recent reports and their ability to provide a nature-based solution • Flood risk and coastal change might also have significant impacts on protected sites - cross-cutting theme • <i>'...or areas of particular road congestion and these have impacts both on human health and biodiversity.'</i> - cross reference use of APIS - see comment <i>above</i> and also European Sites Conservation Objectives and their supplementary advice • <i>'...improved air quality, as well as considering ecological receptors.'</i> - See environment bill targets consultation for types of ambitious targets in scope for air quality https://www.gov.uk/government/publications/environment-bill-2020/august-2020-environment-bill-environmental-targets • <i>'Enhance biodiversity, promote ecosystem resilience and functionality and achieve Biodiversity Net Gain'</i> (Pg 30) - Approximately 85% of Sites of Special Scientific Interest (SSSI's) in England have nitrogen deposition rates above levels at which harm is expected (environmental thresholds), these exceedances will influence the ability of protected sites to reach favourable conservation status / favourable condition. An estimated 95% of nitrogen sensitive habitat is thought to be exceeding its critical load. Nitrogen emissions have been identified as a significant pressure or threat to 62% of England's European protected sites • <i>'...and all opportunities to help meet the objectives of the WFD should be taken when possible.'</i> - Greater detail from the River basin management plans should be included - the overarching objectives of the WFD will need finer grain. • <i>'...Climate change and a growing population will increase pressure on water resources.'</i> - strategic approaches are being developed for water quality issues and sustainable development such as that deployed in the Solent. • <i>'Without a coordinated approach to energy development and infrastructure there is increased potential for water availability and pollution problems...'</i> - effect on habitats from reduced water availability and reduced water quality • Soils and Agricultural Land should be addressed separately. <ul style="list-style-type: none"> - Key issue for soils: Soil Loss/Soil sealing & Contamination. 	

Consultee	Comments	Response
	<ul style="list-style-type: none"> - Key issue for agricultural land: land take/loss of BMV. - Summary of likely evolution <ul style="list-style-type: none"> ▪ Soils - Declining (non-sustainable soil management) ▪ Agricultural Land - Declining (increasing pressures on greenfield land) - AoS Objective: <ul style="list-style-type: none"> ▪ Protect soil resources ▪ Direct development away from Greenfield to Brownfield; avoid development on BMV ▪ Avoid Land Contamination • <i>‘Soil across England and Wales is graded...’</i> - It is the agricultural land which is graded, using soil, site and climatic characteristics and interactions. • <i>‘Soil sealing (the covering of the soil surface...’</i> - Soil sealing and soil degradation can happen on ALL soils, not just those under agricultural use • <i>‘...or the changing of its nature so that it becomes impermeable)...’</i> - This can increased water runoff and flood risk. The surrounding soils need to be suitably managed to be able to allow excess water to drain through the soil profile, rather than overland flow • <i>‘loss to valuable agricultural land which generally cannot be mitigated’</i> - Whilst you cannot mitigate against the permanent loss of agricultural land, minimising the loss, securing the beneficial re-use of the displaced soils, and suitable management of remaining soils (through the Defra Construction code of Practice for the Sustainable Use of Soils on Construction Sites), can help mitigate the loss or damage of the finite soil resource. • <i>‘...existing capacity within existing urban and previously developed areas’</i> - soils and agricultural land are effectively finite in amount and declining in extent so land take is an important consideration. climate change could directly affect many soils properties including drainage, soil moisture content, nutrient cycle rates, carbon sequestration and emission rates and changes in soil leaching, erosion, and runoff. It could also affect soil biodiversity, and stability through clay shrinking. There will also be Indirect effects due to land use changes, together with socio-economic consequences • <i>‘...essential natural capital and perform a range of important ecosystem services and functions’</i> - Wording under heading ‘implications and opportunities’ mixes up impacts on soils and agricultural land. Loss or mixing of soils & compaction should be added to impacts on 	

Consultee	Comments	Response
	<p>agricultural holdings (severance). Changing precipitation patterns will require soils to provide additional resilience to flooding through appropriate management and land use</p> <ul style="list-style-type: none"> Re-word this section: Landscapes, seascapes & Townscapes – there are marked contrasts in the quality, character and distinctiveness of landscapes and townscapes across England and Wales. There is a need to fully protect the highest quality areas , whilst driving best practice principles through all energy development to address poor landscape and townscape environments. <p>There are a total of 13 National Parks within England and Wales. There are also 34 AONB's in England and 4 within Wales. In addition, there are a total of 46 Heritage Coasts around both England and Wales. These are statutorily designated as our finest landscapes and there is a statutory duty on public bodies to 'have regard' to their statutory purposes.</p> '...benefit from protection through designations that will persist in the absence of the NPS' - Poor wording. All Government and statutory bodies have a duty under the CROW Act (and in the Environment Bill) to protect the natural environment and Landscapes. Nationally protected landscapes should be afforded the highest levels of protection. See separate landscape comments in the Word document. Re-word this section: The NPS should seek to conserve and enhance the natural beauty of national parks and AONBs, which is their shared statutory purpose. For land use planning the NPPF expresses this in terms of conserving and enhancing their 'landscape and scenic beauty'. Particular attention should be paid to these areas designated for their landscape value. This includes their landscape and seascape settings where intrusive development can affect the designated area and delivery of its statutory purpose. <p>The character of the wider landscape and townscape should also be protected by ensuring that its integrity and valuable natural open space is not lost.</p> <p>Opportunities for landscape enhancement should be explored, e.g. through sympathetic design and enhancements to existing landscape improvement areas, as well as new planting opportunities associated with new energy development and be in keeping with the aims of the Nature Recovery Network.</p> 	

Consultee	Comments	Response
	<p>Increased energy development poses a serious risk to the special qualities of designated and other valued landscapes. Especially vulnerable are special qualities such as relative tranquillity and a sense of wildness or remoteness. As such, there is a need to protect those special qualities across many parts of England and Wales. Without a co-ordinated strategic approach to development and infrastructure degradation of the special qualities of our finest landscapes designated as AONBs and National Parks may be degraded or lost.</p> <p>The NPS should also aim to ensure that energy developments and associated infrastructure avoid sensitive areas, in particular national Parks and AONBs, The NPS sets out criteria to help assess whether exceptional circumstances can be demonstrated to justify major energy related development within a national park or AONB.</p> <p>The NPS should also respect particular landscape or townscape settings. Careful consideration should be given to design quality in both an urban and rural setting, promoting placemaking principles and seeking to inject character and distinctiveness where possible and where this enhances the sense of place. Design, where possible, should respond positively to the local characteristics, including vernacular architecture when appropriate.</p> <p>Without a co-ordinated strategic approach to development and infrastructure, there is increased potential for planning decisions to lead to inappropriate development, which could produce a cumulatively damaging impact on a designated landscape or fragment existing networks of open space thereby reducing connectivity.</p> <ul style="list-style-type: none"> • Re-word this section (Pg 33): Conserve and enhance the natural beauty our finest landscapes designated as national parks and AONBs and protect wider landscapes and townscapes, and enhance visual amenity • <i>'This will also reduce the need to transport these materials and transport the waste by-products'</i> - Not just construction waste. This ignores the role of energy from waste, and waste generated as part of the operation of energy generation (e.g. soot, bio-catch from water cooling, dredging for HEP, end of life management for renewables and other infrastructure. • <i>'Promote sustainable use of resources and natural assets'</i> - Including ensuring that soil isn't treated as a waste product on development sites, but rather a finite resource - i.e. promoting the sustainable use and management of soils 	

Consultee	Comments	Response
	<ul style="list-style-type: none"> • See reference above to the Environmental Benefits from Nature Tool which might help when considering natural capital approaches /accounting • <i>'...both in terms of crime as well as accidents and engender a perception of safety.'</i> - NB whilst National Trails are noted above - open access land is missing. <p>Comments on Table 6-1 AoS Framework for Energy NPS</p> <ul style="list-style-type: none"> • <i>'Reduction of the carbon emissions of the national portfolio of major energy infrastructure?...</i>' - reduction is very vague, when the CCC is setting carbon budgets for different sectors, including energy generation. The guide questions should be more specific about the contribution of the AoS objective to stated Government ambitions. • <i>'Creation of new carbon sinks/removals through enhancing green infrastructure'</i> - This question should be extended to cover the use of all natural sequestration and not just the enhancement of existing GI. • Section 1 or 2 - What about blue carbon and carbon sequestration generally? Reducing or avoiding impacts to habitats with important roles in carbon sequestration. • <i>'Ensure provision of appropriate compensatory measures is in place when there is no other option to land take from areas of flood plain?'</i> - contribute to the adaptation of nature to a changing climate. • <i>'Contribute to the improvement green infrastructure networks to support adaptation to the potential effects of climate change?'</i> - promote sustainable soil management and land use to increase resilience to climate change • Do you mean nature recovery network? • Add in the role and opportunity of nature based solutions to mitigate and adapt to climate change • <i>'Enhance biodiversity, promoting net gain, and supporting ecosystem resilience and functionality'</i> - Somewhere in this section reference to sensitive or nature inclusive design in the marine environment – what we don't want to see are artificial reefs on soft sediment habitat as a means of increasing biodiversity. But sensitive design working with nature to get the right solution in the right place should be encouraged 	

Consultee	Comments	Response
	<ul style="list-style-type: none"> • <i>'Protect and enhance nationally designated sites such as SSSIs and National Nature Reserves, including those of potential or candidate designation?'</i> - Add in reference to marine conservation zones • <i>'Protect and enhance the Nature Recovery Network?'</i> - Contribute to the meeting of statutory targets in the environment bill • <i>'Promote a net gain in biodiversity for any new major infrastructure development?'</i> - Using the Metric 3.0 being published to support the mandatory BNG requirement in the Environment Bill • <i>'Protect and enhance the character and quality of the landscapes and townscapes, protect and enhance visual amenity'</i> - Suggest re-word: Conserve and enhance the natural beauty our finest landscapes designated as national parks and AONBs, and protect wider landscapes and townscapes, and enhance visual amenity • <i>'Support the integrity of any areas designated for landscape value, including in conjunction with the provisions of any relevant Management Plan (e.g. AONB and local landscape designations)?'</i> - Re-word: Support the integrity and uphold the statutory purposes of any areas statutorily designated for landscape value i.e, National Parks and AONBs, including in conjunction with the provisions of any relevant Management Plan • Add bullet: Maintain the character of those stretches of coastline identified and locally 'designated' as Heritage Coasts. • Enable national character area landscape opportunities to be considered as part of the development process • No.7 - Contribute to the meeting of statutory targets in the environment bill • No.8 - Contribute to the meeting of statutory targets in the environment bill • No.9 - Contribute to the meeting of statutory targets in the environment bill • <i>'Protect soil resources and avoid land contamination'</i> - This should be reworded to: Protect Agricultural Land; soil resources and avoid land contamination • <i>'Avoid development upon the best and most versatile agricultural land?'</i> - avoid the loss of BMV agricultural land • <i>'Ensure the protection of soil resources and reduce soil quality degradation?'</i> - Could the third bullet be reworded to: Protect soil resources and ensure their sustainable use and 	

Consultee	Comments	Response
	<p>management i.e. sustainably managed soil, including the beneficial reuse - i.e. appropriate habitat proposed for the soil type. soil function should be protected as much as possible (e.g. though use of green infrastructure/appropriate land use & management)</p> <ul style="list-style-type: none"> • No. 11 - Access to Greenspace and Green Infrastructure Standards • No. 15 - Decommissioning of infrastructure should be considered in this section <p>Comments on AoS Scoping Report Appendices</p> <p>Page 10 - 25 Year Environment Plan</p> <ul style="list-style-type: none"> • The 25 Year Environment Plan has a specific soil health target of 'improving our approach to soil management: by 2030 we want all of England's soils to be managed sustainably, and we will use natural capital thinking to develop appropriate soil metrics and management approaches'. There are other actions in the Plan which will need to recognise the synergies and dependencies on soil health such as use of natural flood management solutions, SUDS, climate change mitigation and adaptation, though these do not always recognise the key role of healthy soils in the successful achievement of these aims • Similarly the aim that development is in the right places, avoiding our best agricultural land and in embedding the 'environmental net gain' principle reflects a natural capital approach in spatial planning which aims to minimise the impact of development on finite land and soil resources. • The AoS will need to consider implications for soil health <p>Page 10 - Environment Bill Policy Statement 2020</p> <ul style="list-style-type: none"> • The Environment Bill will introduce statutory targets for improvements in air quality, water, soils and biodiversity. As Defra have already consulted on potential targets the assessment should acknowledge the likely contribution (positive or negative) that the Energy NPS' will make to meeting these targets. <p>Page 14 - Natural Environment White Paper (2011)</p> <ul style="list-style-type: none"> • Recognises soil as a key natural capital asset (NEWP para 1.18) and also protection for best and most versatile agricultural land (NEWP para 2.35) • Ensure nature forms part of the AoS framework, including soil. Soil underpins terrestrial ecosystem services. <p>Page 16 - National Infrastructure Plan (2014)</p>	

Consultee	Comments	Response
	<ul style="list-style-type: none"> • The ambitions of the national infrastructure strategy (2020) to achieve Net Zero emissions by 2050 are more pertinent and will override some of the proposals from the 2014 plan <p>Page 24 - Planning Practice Guidance – Climate Change 2015</p> <ul style="list-style-type: none"> • Add reference to the Planning Practice Guide for the Natural Environment. Advises how planning can take account of the quality of agricultural land and safeguard soils <p>Page 38 - Building a Low-Carbon Economy – The UK's Contribution to Tackling Climate Change (Committee on Climate Change, 2008) and the Fourth Carbon Budget: Reducing Emissions</p> <ul style="list-style-type: none"> • Through the 2020s (CCC, 2010) • Objectives ...to meet the Government's Net Zero commitment and CCC Carbon Budgeting recommendations. <p>Page 40 - The Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018</p> <ul style="list-style-type: none"> • Reference should also be made to the Environmental Assessment of Plans and Programmes Regulations (2004) that set out the procedural requirements for undertaking a Strategic Environmental Assessment. If the AoS is to meet the Espoo Convention requirements then these legislative steps should be followed. <p>Page 50 - Safeguarding our Soils: a strategy for England 2009</p> <ul style="list-style-type: none"> • This top bullet should be amended from 'better protection of agricultural soils' to 'better protection of agricultural land'. An additional bullet should be added 'better protection for soils' (i.e. all soils) • Ensure protection of soils resources and agricultural land is included as an objective within the AoS Framework <p>Page 94 – Biodiversity and Ecosystems: Special Areas of Conservation (SACs)</p> <ul style="list-style-type: none"> • The condition of designated sites could be considered as an indicator. As well as the area covered by designation it will be important to consider what condition they are in and how they are managed. This is covered a bit on p94 of the appendices for SACs using the article 17 data but not for SPA or MCZ <p>Page 120 - Landscape: National Parks</p>	

Consultee	Comments	Response
	<ul style="list-style-type: none"> • Add: Under section 11A of the 1949 Act public bodies have a duty to 'have regard' to the purposes of a National Park when reaching decisions and carrying out work which could affect them. <p>Page 121 - Landscape: Areas of Outstanding Natural Beauty (AONBs) and National Scenic Areas</p> <ul style="list-style-type: none"> • Add: Section 85 of the Countryside and Rights of Way Act also places a duty on public bodies to 'have regard' to the statutory purpose of an AONB in taking decisions and carrying out work that could affect that purpose. <p>Page 127 - Soils, Geology, and Land Use: Location of Geological SSSIs / ASSIs</p> <ul style="list-style-type: none"> • Agriculture Land Classification (E&W) - Strategic scale (1:250,000) Agricultural Land Classification (ALC) mapping is available. The purpose of ALC was to map the agricultural land quality across E&W to a common standard, to ensure scarce, high quality land could be protected from loss to development through the planning system. This mapping does not differentiate Grade 3 into Subgrades 3a and 3b; therefore, the extent and location of BMV can not be determined from this mapping, however it does provide a strategic guide to land quality, primarily to support regional and county level planning. • England: 'likelihood of BMV agricultural land mapping. • The best agricultural land (Best and Most Versatile) has greater protection than non-BMV land. It is not a land designation per se. • Soil Map (E&W) - The National Soil Map is available at a scale of 1:250,000 and shows the Soil Associations, including peat and peaty soil associations. • Peat Map <p>Page 136 – Baseline Maps</p> <ul style="list-style-type: none"> • suggest inclusion of 'high likelihood' of BMV ; also main peat areas e.g from soilscape mapping <p>Page 138/139- Biodiversity and Ecosystem baseline maps</p> <ul style="list-style-type: none"> • The harbour porpoise SACs appear to be missing off the designation maps on p 138 and 139 of appendices. 	

Consultee	Comments	Response
	<p>Consultation Questions -general points:</p> <p>1: Are there other plans, programmes or environmental protection objectives that should be identified and reviewed as part of the AoS process (Appendix A)?</p> <p>We consider that the 25 Year Environment Plan and Environment Bill are not comprehensively referenced/ covered in the documents. For example there is reference to a GI national network which appears to be confused with the Nature Recovery Network. The Environmental Targets in the Environment Bill also lack reference.</p> <p>We are currently commenting on the scoping for the offshore energy SEA. We consider that the same protection objectives should be cross-referenced and covered from a marine perspective. In particular with section 4.1 of the offshore energy SEA scoping report (p41 and 42).</p> <p>There are some omissions that are in the SEA scoping report and should also be covered here are Marine Strategy Part 1: UK Initial Assessment and Good Environmental Status (2012) and update (2019) Marine Strategy Part 2: UK Marine Monitoring Programmes (2014) and update (consultation, 2020) Marine Strategy Part 3: UK Programme of Measures (2015)</p> <p>2: Is there additional information that needs to be considered as part of the baseline data?</p> <p>We have added in relevant omissions/additions to the attached document. Specific points include:</p> <ul style="list-style-type: none"> • It is not clear how the air quality section cross-references with environmental impacts. It focusses only on human health and omits the baseline information such as the Air Pollution Information System for assessment of ecological receptors. • The article 17 Annex 1 habitat data layers shows the location of those habitats inside and outside designated sites and could be included as part of the baseline. • There are descriptors and indicators under the marine strategy framework directive that could usefully be used for the wider marine environment. • The condition of designated sites could be considered as an indicator. • The harbour porpoise SACs appear to be missing off the designation maps <p>3: Do you consider that the range of sustainability problems and issues covered is appropriate?</p>	

Consultee	Comments	Response
	<p>See comments provided in the attached documents. We do consider that there are many sections here that could be re-phrased and make clearer references to the terminology around green infrastructure, the Nature Recovery Network, nature-based solutions to climate change, landscape and soils. We do welcome the referencing to biodiversity net gain and environmental net gain, but that this should also be seen in the context of the delivery of the Nature Recovery Network and health and wellbeing.</p> <p>4: Are there any changes you consider should be made to the proposed AoS objectives and guide questions?</p> <p>We have added suggested additions to the questions and changes to the text into the attached document.</p> <p>In particular around including the marine environment, nature-based solutions to climate change, soils, landscape and access to nature for health and wellbeing.</p> <p>5: Do you have further suggestions regarding the scope of the AoS and its proposed assessment of the reviewed NPS?</p> <p>There is a requirement to consider cumulative and in-combination effects. The scoping report could identify which of these are 'significant' and so warrant further investigation. The environmental report needs to include an assessment of cumulative effects. Potential effects we would welcome consideration of through the process include for example those relating to landscape around associated development (such as overhead lines and pylons) and existing development.</p>	
Green Alliance	<p>We have reviewed Appendix A and Table 3-1 and there appears to be an omission in relation to environmental principles. We note that the Environment Bill Policy Statement 2020 is listed in Table 3-1 but this is a supporting and very general policy note, which contains little guidance to policy makers on the principles themselves.</p> <p>Article 191(2) of the Treaty on the Functioning of the European Union provides that EU environmental policy 'shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay.' Article 11 provides that 'Environmental protection requirements must be integrated into the definition and implementation of the Union's policies and activities, in particular with a view to promoting sustainable development.'</p>	<p>Additional document noted and added to the review of Plans and Policies – no additional AoS Themes identified and considered that amendments to AoS Framework are not required</p>

Consultee	Comments	Response
	<p>Now that the UK is no longer a member of the EU, the environmental principles are being embedded in our domestic legal frameworks. The Environment Bill, which is expected back in Parliament shortly, will place a legal duty on ministers of the crown in relation to five environmental principles listed in section 16(5) of the bill:</p> <ul style="list-style-type: none"> (a) the principle that environmental protection should be integrated into the making of policies (b) the principle of preventative action to avert environmental damage (c) the precautionary principle, so far as relating to the environment (d) the principle that environmental damage should as a priority be rectified at source (e) the polluter pays principle <p>There is currently a live consultation on a policy statement which aims to place environmental considerations at the heart of policy making, including on the revising of policy such as this.</p> <p>While the principles have not yet been enshrined in our domestic statute book because of the ongoing delays to the passage of the Environment Bill, the government has committed on many occasions to ensure that they inform ministerial policy making, so we would suggest that the principles are explicitly listed in Appendix A and other relevant sections of the Appraisal of Sustainability to ensure that they continue to inform policy making during this interregnum.</p>	
Historic England	<p>We have some general comments, and some points of detail:</p> <p>General: Overall, we welcome this Scoping Report in relation to the historic environment. However, we would like to see:</p> <ul style="list-style-type: none"> • more emphasis on the cumulative impact of major energy infrastructure, and protecting the historic environment from it, which needs to be taken into greater account within this AoS scoping report; • more emphasis on the setting impacts of major energy infrastructure, and protecting the settings of heritage assets. The following publication sets out guidance on managing change within the settings of heritage assets: https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/; • more on the historic marine environment throughout 	<p>Additional documents noted and added to the review of Plans and Policies – no additional AoS Themes identified and considered that amendments to AoS Framework are not required.</p> <p>References have been added to nationally important archaeological sites, historic landscapes, Areas of Archaeological Importance and the Heritage at Risk register.</p>

Consultee	Comments	Response
	<ul style="list-style-type: none"> • more consistency – quite often there is good detail, but the relevant legislation or plan is not listed; • the baseline should include nationally important archaeological sites (not all such are scheduled); the marine historic environment; historic landscapes https://archaeologydataservice.ac.uk/archives/view/HLC/; Areas of Archaeological Importance; and should also take account of locally listed sites and non-designated archaeological sites of regional or local importance. The Heritage at Risk Register is also worth considering: https://historicengland.org.uk/advice/heritage-at-risk/search-register/ as part of a baseline assessment; • reference to Historic England rather than Historic England as the statutory body. <p>Detail: Although we recognise that the list is not exhaustive, we would like the following to be included and reviewed under International PPL:</p> <ul style="list-style-type: none"> • The Valetta Convention 1992 (Convention for the Protection of Archaeological Heritage) • The Florence Convention 2000 (European Landscape Convention) <p>Under National PPL, we would like to see the following important pieces of legislation included and reviewed:</p> <ul style="list-style-type: none"> • The National Heritage Act 1983 (as amended 2002) – the 1953 Act is not relevant in England • The Protection of Military Remains Act 1986 • The Protection of Wrecks Act 1973 <p>Under England PPL, we would like the following included:</p> <ul style="list-style-type: none"> • The Government’s Heritage Statement 2017 • Marine Plans for England <p>We would like the contents of all the above to then follow through into the rest of the AoS, and to be taken into account as appropriate.</p>	

Consultee	Comments	Response
JNCC	JNCC advised that they would not be making a response to the consultation	Noted
Welsh Government	<p>The Welsh Government noted a range of Welsh Government publications for consideration:</p> <ul style="list-style-type: none"> • Planning Policy Wales Version 11- • Future Wales: The National Plan 2040 • Future Wales Integrated Sustainability Appraisal • Future Wales Habitats Regulations Assessment • Future Wales: Collection of Evidence (provides a useful summary of evidence which supported the preparation of FW) <p>Colleagues also flagged the need to reference and consider the WBFG Act (useful guidance here across all this work)</p> <ul style="list-style-type: none"> • Wales National Marine Plan • Prosperity for All: a Low Carbon Wales • Policy Statement on Local Ownership of Energy Developments <p>The Welsh Government also suggested that the SA scoping report needs to consider impacts on the Welsh language and highlighted the objectives and questions at the end of the AoS will need to make reference to the Wellbeing of Future Generations Act and the Environment (Wales) Act in relation to Wales.</p> <p>Further note was made of additional feedback. This included additional sources of information and noted:</p> <ul style="list-style-type: none"> • Some read-across to water sector infrastructure but the cross-references are accurate and up to date on that front. • Wales' Flood Strategy is referenced, however the 2011 version is referenced rather than the 2020 edition, so grateful if that could be updated. • There's an incorrect reference to Well-being 'and' Future Generations Act, but Env Act is covered. • Section "3.3.6 Water Resources" looks good from our perspective: <ul style="list-style-type: none"> o "Protect and improve the quality of ground and surface water 	Additional documents noted and added to the review of Plans and Policies – no additional AoS Themes identified and considered that amendments to AoS Framework are not required

Consultee	Comments	Response
	<ul style="list-style-type: none"> o Help to meet objectives of the Water Framework Directive (WFD) and the relevant River Basin Management Plan o Make use of Sustainable Drainage Systems (SuDS)" 	
SEPA	<p>Query raised as to the scope of the HRA – if this is to cover Scotland in addition to England and Wales. Clarification on this issue has been made with BEIS Legal Department.</p> <p>SEPA also noted a range of additional Plans and Policies relevant to Scotland and updated the list provided in the Scoping Report as follows:</p> <ul style="list-style-type: none"> • Scotland Contaminated Land (Scotland) Regulations (2000 and 2005) • Forestry and Land Management (Scotland) Act 2018 • Scotland's Forestry Strategy 2019–2029 • Flood Risk Management Act (Scotland) (2009) • Climate Change (Scotland) Act 2009 • Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 • Climate Ready Scotland: climate change adaptation programme 2019-2024 • Scotland's Zero Waste Plan (2010) • The Air Quality Standards (Scotland) Regulations (2010) • Air Quality (Scotland) Amendment Regulations 2016 • Cleaner Air for Scotland – The Road to a Healthier Future (the Scottish Government, 2015) • The Nature Conservation (Scotland) Act 2004 (Authorised Operations) Order 2011 • Wildlife and Natural Environment (Scotland) Act 2011 (as amended) • The Town and Country Planning (Tree Preservation Order and Trees in Conservation Areas) (Scotland) Regulations 2010 • Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017 • The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) • Forestry and Land Management (Scotland) Act 2018 	<p>Additional documents noted and added to the review of Plans and Policies – no additional AoS Themes identified and considered that amendments to AoS Framework are not required</p>

Consultee	Comments	Response
	<ul style="list-style-type: none"> • Forestry (Felling)(Scotland) Regulations 2019 • The Waste (Scotland) Regulations 2012 • Tourism Development Framework (2016) • The Smoke Control Areas (Authorised Fuels) Scotland Regulations 2014 • Scotland's Third National Planning Framework (2014) • Scottish Planning Policy (2014) • The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013 • Scottish Energy Strategy: The Future of Energy in Scotland (2017) • Energy strategy: position statement (2021) • Environmental Noise (Scotland) Regulations (2006) as amended by The Environmental Noise (Scotland) Amendment Regulations 2018 • Scotland's Biodiversity Strategy (consists of two documents - 2020 Challenge for Scotland's Biodiversity - A Strategy for the conservation and enhancement of biodiversity in Scotland and Scotland's Biodiversity: It's in Your Hands (2003)) • PAN 3/2010 Community Engagement • PAN 33 Development of Contaminated Land • PAN 51 Planning, Environmental Protection and Regulation • PAN 2/2011 Planning and Archaeology • PAN 71 Conservation Area Management • PAN 60 Planning for Natural Heritage • PAN 1/2011 Planning and Noise • PAN 61 Waste Management Planning • Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update 	
The Crown Estate	The Crown Estate noted that the proposed methodology for the plan-level HRA appears to miss an opportunity to provide a strategic pathway to the delivery of offshore wind and overcome some significant barriers to further development which at the same time protecting the UKs	Noted – see HRA Report for details of how these

Consultee	Comments	Response
	<p>precious habitats and species. The NPS review and its HRA process could be used to set out the strategic framework which links policy to planning to delivery, with the overarching goal of building a pathway to net zero. This will require consultation and joint working with other policy and delivery bodies, and a significant amount of work has already been undertaken in this regard across a range of government departments, delivery bodies and other organisations such as The Wildlife Trusts and RSPB.</p> <p>The NPS review and its HRA process present a real opportunity for BEIS to provide a strategic, meaningful and workable pathway for the energy transition towards reaching net zero. The Crown Estate is working closely with Defra and BEIS on these issues, including through the Offshore Wind Evidence and Change Programme and the recently established Cross Government Working Group on Compensation chaired by Defra, this group may be a useful forum to explore these issues further. The Crown Estate set out some initial observations below.</p> <ul style="list-style-type: none"> • We are supportive of the review of National Policy Statements, however, I must highlight our concerns in relation to the proposed process to undertake the plan-level HRA as highlighted above. As the principle policy document supporting applications for development consent under the Planning Act 2008, in a context where a number of current projects are triggering the need make use of the HRA derogation process due to in-combination impacts, on both Special Areas of Conservation and Special Protection Areas the NPS revision and the NPS plan-level HRA provide an opportunity for government to tackle some of the key issues, such as compensatory measures, at a strategic level to deliver better environmental outcomes while still maintaining the speed of deployment required to meet net zero targets. There are a number of significant challenges currently being faced around the identification, delivery and security of compensatory measures for offshore wind and it is becoming clear that a strategic solution will be required to enable further offshore wind deployment in line with government ambition. • HRA is a decision influencing process, and it is unclear how the NPS review HRA will be used in the formulation and amendment of the plan – the NPSs. Furthermore, it is not clear how the plan-level HRA sits alongside the current Offshore Energy Strategic Environmental Assessment 4. • Further details are needed on the methodology for considering in-combination effects of other known plans/projects. Particularly Offshore Wind Leasing Round 4. In relation to both 	<p>comments were considered / addressed</p>

Consultee	Comments	Response
	<p>EN-3 (renewable energy) and EN-5 (electricity network infrastructure) it feels like a missed opportunity not to incorporate the work already being undertaken.</p> <ul style="list-style-type: none"> • There is a lack of clarity over the utility of the HRA. As currently drafted, the methodology is quite confused and contradictory (see specific In-combination effects point below for an example). Generally, the document needs some direction – what is this HRA exercise adding to the overall consenting/management process? Securing and co-ordinating plan-level measures will lead to more effective mitigation and reduce challenges encountered in the consenting of individual projects. • Lack of Spatial component. Without this it is very challenging to see what the HRA will add to the overall assessment process. As noted above, HRA is a decision influencing process and therefore surely the spatial component is the entirety of the English and Welsh territorial and marine area when considering offshore wind for example? If this approach was taken, then the HRA could be able to identify and target areas within this limit in which development would not be supported. • The methodology report refers to ‘statutory consultation’ (preface and p1). Can you please provide more details about this process – when do consultees get an opportunity to comment? This process should be iterative and give the opportunity to feed into the evolving process. • This is a strategic high-level plan but limiting the assessment to no spatial extent feels like a missed opportunity. Relevant, known, technologies should be included to help inform the ‘worst case’ (i.e., floating and fixed bottom offshore wind). On p12 (para 3.5.2) the methodology talks about identifying potential effects alone and in-combination and states “where possible, potential specific effects will be flagged, but it is prudent to assume that detailed consideration of effects will only be made at project-level HRA for individual proposed infrastructure projects”. The Crown Estate has done a significant amount of work on plan-level HRA for offshore wind, for example developing project design envelopes to inform our assessment and quantification of effects. • In-combination Effects: Para 3.5.3 (p12) states that “The absence of policies or objectives that could promote development and the lack of nominated sites associated with any of the six NPSs, means there is no direct mechanism by which the NPS’s could have any impact on European Sites.” Para 3.6.7 (p15) states “where it can be demonstrated that the NPS will have no impact, i.e. no appreciable effect, then there is no requirement to undertake an in- 	

Consultee	Comments	Response
	<p>combination assessment”. Taking these together appears to conclude that an in-combination assessment will not be needed. However, para 3.6.8 (p15) continues: “due to the strategic and high-level nature of the NPSs, it may not be possible to screen out European Sites from appropriate assessment”. This links to earlier points about the methodology not having a spatial component and the general purpose of this HRA exercise.</p> <ul style="list-style-type: none"> • The NPS’s and their associated HRA, could be used to set out the strategic framework which links policy to planning to delivery, with the overarching goal of building a pathway to net zero. Consultation and joint working with other policy and delivery bodies would be key here but with the amount of work that has already been done within the sectors it feels like this is a real opportunity for BEIS to provide something meaningful and workable for the energy transition and reaching net zero. 	

Table B-2 - Overview of NRW comments to AoS Scoping document

Consultee	Nature of Response	Implication for AoS
Consultation on the Review of the UK OESEA4 Scoping Report. Note the following consultee response was made by NRW in respect of the UK OESEA4 and were provided by NRW for information.		
General Comments		
NRW	<p>Wave and Tidal Development</p> <p>The SR refers to UK Government’s Energy White Paper and that the role that wave and tidal technologies will play in future government plans is subject to further evaluation. However, it is important to recognise that these technologies already have strong government support in Wales and that there are numerous proposals for tidal stream and lagoon projects in Wales that would benefit from improvements to the environmental evidence base.</p>	Comment noted. In addition, tidal lagoons have been assessed generically in AoS-1 and tidal stream energy non-generic effects have been specifically considered in AoS-3.
NRW	<p>Tidal Lagoons</p> <p>Proposals for multiple tidal lagoon projects are currently being developed around the coast of Wales in addition to the continuing determination of the marine licence for Swansea Bay Tidal Lagoon. The size and likely location of proposed tidal lagoon deployments suggests that this technology could have significant effects upon the environment. The main effects of concern relate to loss of habitat, changes to the physical environment (especially changes to tidal and</p>	Tidal lagoons have not been assessed generically in AoS-1 and tidal stream energy non-generic effects have been specifically considered in AoS-3

	<p>sedimentary regimes) impacts on migratory and mobile species, and the consequent implications for areas that are designated because of their importance for marine and coastal biodiversity, water quality management, coastal flood defence and fisheries.</p> <p>Managing issues such as far-field effects, cumulative effects and compensatory measures are likely to be very challenging at the individual project level. Furthermore, it may not be possible to mitigate for some effects at all and, where this is the case, legal derogations will be needed if projects are to proceed which in themselves will prove challenging: numerous derogations from normal Water Framework Directive assessment procedures are likely to be required and it may not be possible to design compensatory measures that satisfy accepted legal interpretations.</p> <p>It is critical therefore that tidal lagoon development is supported by a strategic, spatial and evidence-based approach to planning and assessment. The Welsh National Marine Plan encourages a strategic and step-wise approach to support sustainable development of the tidal range sector with a better understanding of the opportunities and risks. NRW therefore welcomes the inclusion of the technology within the scope of the SEA and encourages as detailed an assessment of the implications of the technology as possible.</p>	
NRW	<p>Restoration of marine and coastal ecosystems</p> <p>In Wales, the focus of the SMNR is on the maintenance and enhancement of ecosystem resilience and the benefits that ecosystems provide, in line with the Wellbeing of Future Generations (Wales) Act 2015¹ and the Environment (Wales) Act 2016². The Welsh National Marine Plan also includes a range of policies which, taken together, support delivery of SMNR and encourages the restoration and enhancement of marine ecosystems (Policy ENV_01).</p> <p>There is a need to better understand how offshore energy development can support ecosystem restoration. For offshore wind this is being addressed by the Net Environmental Gain strand of the Offshore Wind Evidence and Change Programme supported by wider work on Net Benefits within Defra. However, whilst some of the initiatives developed under that programme may be applicable to other industries, it will be important to understand how other activities can also contribute. The SEA R&D programme might usefully explore this. In Wales, one suggestion would be for the programme to make links with the Ecostructure Project to understand how some of the developing techniques might be applied to offshore energy activity including cable protection measures.</p> <p>NRW will shortly be publishing a study of the opportunities for restoring habitats in Wales (saltmarsh and mudflats, seagrass beds, native oyster beds, horse mussel and Sabellaria beds). Please let us know if you would like a copy of the report</p>	<p>Offshore wind generic effects have been assessed in AoS-1 and non-generic effects have been specifically assessed as part of AoS-3.</p>

NRW response to questions – 1. Consultees are invited to highlight additional initiatives which they consider are relevant to the draft plan/programme		
NRW	<p>Tidal Lagoon Challenge</p> <p>Welsh Government have established a Marine Energy Programme, as part of which they are considering the feasibility of a tidal lagoon challenge to further stimulate growth in the tidal lagoon sector. Currently, Welsh Government are undertaking a market testing exercise which, depending on the outcome, could result in Government support for tidal lagoon development in Wales. A Prior Information Notice has been issued to gather information from the sector to inform Government's approach to issuing a challenge.</p>	Comment acknowledged.
NRW	<p>MPA network completion project</p> <p>The report references the MPA Network Completion Project but it is also worth highlighting that Welsh Government, with support from NRW and JNCC and other stakeholders are currently working to identify a small number of possible Marine Conservation Zones.</p> <p>There is no timetable for designation and although it is likely to be completed after this SEA, it may have implications for the plans and projects that will follow. The following provides additional information about the status of the project in Wales:</p> <ul style="list-style-type: none"> • The work fulfils a 2017 Ministerial commitment to meet national and international obligations to complete the network of Marine Protected Areas, informed by the 2016 Welsh MPA network assessment. • Welsh Government are currently working with the task and finish group to develop Areas of Search, which are large areas within which smaller possible MCZs will be identified. • Once the Areas of Search are finalised, and following the election quiet period, Welsh Government will begin a period of informal engagement with interested sectors and stakeholders to gather their views. • Having taken any views on board, Welsh Government and the task and finish group will draft boundaries of possible MCZs which will then be subject to a public consultation • The designation of MCZs intends to minimise socio-economic impacts and there will be many opportunities for interested parties to be involved during the informal engagement and public consultation. • The MCZs will be multi-use and their management will be determined by the sensitivity of the designated features to activities present. 	Comment noted – potential for new MCZs made within Appendix D under 'Biodiversity and Ecosystem: MCZ' section

NRW	Hydrogen Welsh Government are seeking to develop the hydrogen energy sector and have recently consulted on their approach for Wales. The consultation document refers to development plans and projects that the SEA should take into account	Comment acknowledge but the ENs are non-locational and therefore the SEA has been undertaken in that vein
NRW	Floating Offshore Wind Although Government commitments to develop floating offshore wind are referenced in the SR the leasing round for floating wind development in the Celtic Sea recently announced by The Crown Estate will also need to be considered.	Comment noted. Offshore wind considered within the NPS/AoS, however specific locational details are not known at this stage.
NRW	Offshore Transmission Network Review & Future Energy Scenarios The network review is referred to in the description of the policy context, the outcomes of the review, and the Future Energy Scenarios work that will inform the review, may have a significant influence on the final location of cabling associated with development and may need to be considered by the SEA subject to the timing of publication of any outputs.	Comment acknowledged but the ENs are non-locational and therefore the SEA has been undertaken in that vein
NRW response to questions – 2. Consultees are invited to draw attention to and provide (where relevant/possible) additional information and data sets which they consider of potential relevance to this SEA <i>(It is difficult to comment in detail on the evidence that will be used in the assessment as the information provided in the SR is understandably summarised at a high level. We have therefore highlighted information that we believe will be of particular relevance from a Welsh perspective and signposted to more detailed information that should be reviewed for relevance to the assessment)</i>		
NRW	Sustainable Management of Natural Resources SMNR is a key requirement of The Environment Act (Wales) 2016 and the report usefully refers to the act and the Natural Resources Policy (NRP). The SR also references the State of Natural Resources report (SoNaRR) which provides the evidence for the policy in the NRP and the Marine Area Statement which is an expression of the measures that are being undertaken or are otherwise required to deliver the NRP. Although the information in both documents is necessarily high-level they are an evidence based identification of the key environmental pressures and challenges in Wales. It is worth noting however, that the last version of SoNaRR was published in 2020 and this version should be reviewed for the assessment. SoNaRR is of particular relevance to the OESEA, especially the chapters on Coastal Margins and Marine. These should be reviewed to ensure the OESEA comprehensively addresses the pressures relevant to Wales. For example, both chapters highlight the risks of invasive and	Comment noted - Policy and text updated accordingly

	<p>nonnative species which are not currently identified as problems by the scoping report. SoNaRR also provides a useful summary of evidence which the OESEA could draw upon.</p> <p>The evidence gathering and strategic assessment undertaken by the OESEA is well aligned with many of the measures that are identified within the Area Statement as necessary for SMNR.</p> <p>Highlighting this fact would demonstrate the value of the OESEA process to Wales.</p>	
NRW	<p>NRW Technical Guidance - NRW has recently produced technical guidance that may help to support the assessment. The guidance on our Marine Development web pages is relevant to the energy technologies covered by the SEA. In particular, the following are worth reviewing:</p> <ul style="list-style-type: none"> • Marine and coastal evidence reports – a list of NRW evidence reports that may be relevant to assessment of marine development. • Marine ecology datasets for marine developments – guidance for developers on the datasets NRW holds that is useful in scoping assessments. • Assessment of Benthic Habitats for Marine Development • Physical Processes and Environmental Impact Assessment guidance • Evidence reports on seascape and visual sensitivity to offshore wind farms <ul style="list-style-type: none"> - Stage 1 - The relationship between distance of offshore turbine away from a sensitive receptor and magnitude of visual effects - Stage 2 - Offshore wind farm siting and design guidelines in relation to seascape - Stage 3 – Visual sensitivity of the marine settings of Wales’s Designated Landscapes to offshore wind farms <p>In addition, we have produced a digest of landscape and seascape policy, guidance and evidence sources, which we have forwarded separately. Of particular note, references in the SR in section 4.3 ‘Landscape/seascape’ (page 53) need updating, for example:</p> <ul style="list-style-type: none"> ▪ Under ‘UK’, the seascape sensitivity assessment guidance from MMO ▪ Under ‘Local’ Local Seascape Character Assessments (we suggest you don’t need to list them as there are several now, details are in our digest). <p>We are also aware of guidance produced by NatureScot on ‘Coastal Character Assessment’ but do not see it listed in the Scottish Section.</p> <ul style="list-style-type: none"> • Advice on sensitivity of marine ecology receptors to cabling activities in Wales for Round 4 (Marine Data Exchange) • Marine Licensing guidance on adaptive management and project phasing. 	<p>Comment noted – Technical Guidance documents added to AoS Report</p>

	NRW has further relevant guidance under development which will be added to our website as soon as it is available. We will alert the SEA team when it is published but it's is worth reviewing the marine development pages periodically to check for updates.	
NRW	<p>Other relevant sources of information</p> <p>The following are key sources that do not appear to have been referenced in the SR.</p> <ul style="list-style-type: none"> • ORJIP - Ocean Energy Forward Look and Critical Evidence Needs Assessment; • Tethys – Evidence about the environmental effects of offshore wind and marine energy; in particular the OES-Environmental 2020 State of the Science Report: Environmental Effects of Marine Renewable Energy Development Around the World • Review of potential collision between tidal stream devices and marine animals. NRW Evidence Report No. 44 (report sent separately) • Welsh Government report of Mitigation and compensation opportunity in marine consenting. <p>Defra's Biodiversity Impacts Evidence Group has recently commissioned a study of the displacement of marine mammals by tidal stream arrays. The study is complete but has not yet reported. We will forward the final report when it is available:</p> <p><i>MBIEG (2020). Potential effects and consequences of displacement of marine mammals by tidal stream arrays and development of an assessment framework. A report produced by SMRU Consulting for Defra on behalf of the Marine Biodiversity Impacts Evidence Group, Project No: XX, XXpp</i></p>	Comment noted but it is felt that these are too detailed sources of information for the high level non-locational SEA that has been conducted
NRW response to questions – 3. Do you agree with the choice of Regional Seas used to help describe the environmental baseline?		
NRW	Yes, the information provided allows continuity with other assessments and previous OESEA's. However, with increased adoption of marine plans, consideration should be given to how configuration of OESEA aligns with the requirements and objectives of marine plans, including the Welsh National Marine Plan.	Comment noted. Marine Plans have a consideration in the SEA
NRW response to questions – 4. Are there any additional environmental problems you consider to be relevant to the SEA?		
NRW	<p>Tidal Lagoons and Eutrophication</p> <p>We agree with the description of eutrophication status (s5.5.1 p94). However, hydrogeomorphological change, and especially enclosing water within sea walls and therefore restricting natural circulation and exchange, may lead to a deterioration or failure of water bodies to achieve Good Ecological Status (GES) as required by the Water Framework Regulations. Should tidal lagoon development take place in Wales, it is likely to occur in areas not generally at risk of eutrophication but impoundment of water in these areas is likely to increase this risk</p>	Comment noted.

	significantly, alongside other effects on fish and phytoplankton that could also prevent achievement of GES or cause deterioration in status.	
NRW	<p>Gaps in evidence about impacts of tidal lagoon and tidal stream technologies</p> <p>The gaps in evidence about the impacts of offshore wind are well defined and considerable effort is underway to resolve them. However, there are critical gaps associated with tidal stream and tidal range development (see our general comments).</p> <p>NRW has identified and undertaken marine research much of which is relevant to offshore energy development and the SEA team have already been alerted to some of it. The list of projects NRW has identified and the status of progress towards addressing them is provided in Annex 2 for information.</p> <p>The OESEA research programme could help address some of the remaining gaps. From NRW's perspective the following are critical evidence gaps that require urgent attention and that NRW does not have the resource to deliver:</p> <ul style="list-style-type: none"> • The last strategic but comprehensive examination of the environmental evidence base for tidal range was undertaken by the Severn Tidal Power Feasibility Study in 2010. The study highlighted the risks associated with tidal range development and the significant gaps in evidence particularly about impacts on hydraulics and geomorphology, marine ecology, especially fish, as well as a need to better understand the effectiveness of mitigation and compensatory measures. The evidence has not moved on significantly since although ORJIP Ocean Energy provided an updated summary of the evidence gaps within a Forward Look. Tidal lagoons have the potential to provide some flood protection at the coast but balancing these benefits against the negative effects on coastal defences and flood risk elsewhere through changes to physical processes will require good evidence. <p>Any development of tidal lagoons, even projects of demonstrator scale, will require these gaps in evidence to be addressed and the OESEA might usefully acknowledge this in its recommendations and also target some of its R&D programme at addressing them.</p> <ul style="list-style-type: none"> • The lack of evidence about diadromous fish migration routes means that impact prediction models identify fish losses which are so high that it is difficult to find suitable mitigation or secure any required compensation. <p>Furthermore, recent consideration of byelaws governing Salmon and Sea Trout have established that there is no 'de minimis' loss of these species that would be acceptable further highlighting the need for greater precision in impact predictions.</p>	Comment noted.

	<ul style="list-style-type: none"> Limited evidence gathering has been undertaken off the South Wales coast, but this needs to be supplemented with additional work such as fish tagging and other telemetry studies. This evidence is needed to adequately assess all types of marine energy developments but is particularly relevant to tidal range and near shore tidal stream developments. NRW has commissioned a review of what might be needed to better understand diadromous fish population distribution and behaviour. (We also understand that a similar review is underway within the Scotmer programme by the Atlantic Salmon Trust) and we have recently forwarded draft reports of the study so that any recommendations can be considered by the OESEA research programme. Consenting for tidal stream is particularly hampered by a lack of knowledge of the risks of collision, especially to marine mammals and birds. For those projects that have or will get consent it will be important to utilise effective detection technologies so that we can maximise learning (and in some cases meet the requirements of consent). Although some technologies exist, improved methodologies are likely to be of significant benefit to future projects. Welsh Government has commissioned a review of collision detection technologies and publication is likely to be after the Welsh election. The Marine Energy Engineering Centre of Excellence, in collaboration with the ORE Catapult, will be looking to progress a series of innovation challenges to try and tackle some of the key technical challenges around monitoring technologies. Floating offshore wind (FLOW) is a new technology and it is important to be clear about the significance of any impacts arising from FLOW-specific construction and operational activities (e.g. noise from pin piling and snapping/thrumming of cables, entanglement and disturbance etc). However, many of these are similar to those already employed by other industries, especially offshore oil and gas, and it would be sensible to draw on any evidence already available from assessments of these activities to confirm or discount these impacts or to identify any new impacts. 	
NRW	<p>Poor Knowledge of the status of mammals</p> <p>Note that the SCANS III survey has been completed (in 2016) and relevant SR the text needs updating</p>	Comment noted - Reference to SCANS-III provided within Appendix D - baseline data on Biodiversity
NRW response to questions – 5. Are there any additional influences, and supporting data sources, on the likely evolution of the environmental baseline?		
NRW	Collision risk assessment	Comment noted.

	It is possible that significant tidal stream deployment takes place within the timescales of OESEA4. Assessments of the potential impact of collision on fish, marine birds and mammals rely on estimates of collision risk and the level of removal that populations can sustain. An increase in the scale of deployment would potentially lead to an increase in collision risk overall, with a corresponding decrease in the 'headroom' available for future project assessments.	
NRW	Learning from existing projects Deployment of devices represents an important learning opportunity and for key evidence gaps to be filled. It might be helpful to explore how the OESEA4 R&D programme can support additional monitoring and assessment activity. Currently, assessment of even some of the lower risk issues are reliant of complex population and physical process modelling that would benefit from verification to improve certainty. NRW would encourage BEIS and the SEA Team to make links with the Consenting Strategic Advisory Group in Wales established to identify opportunities for learning and information sharing from projects that are deployed in Wales. The best approach would be to contact the group's secretariat and NRW can supply contacts details if needed.	Comment noted.
NRW	MPA network completion programme – see response to question 1.	Comment noted.
NRW	Turtles This recent paper should be incorporated: Botterell, Z., Penrose, R., Witt, M., & Godley, B. (2020). Long-term insights into marine turtle sightings, strandings and captures around the UK and Ireland (1910–2018). Journal of the Marine Biological Association of the United Kingdom, 100(6), 869-877. doi:10.1017/S0025315420000843	Comment noted.
NRW response to questions – 6. Are there any additional alternatives that you feel the SEA should reflect?		
NRW	No additional comments	Comment noted
NRW response to questions – 7. Are there any objectives that you feel should be included or removed?		
NRW	The objectives should include the following: <ul style="list-style-type: none"> • Seek to maintain and enhance biodiversity required by the Environment Act (Wales) 2016 and encouraged through the WNMP. • No adverse change to the status of Bathing and Shellfish Waters. 	Comment noted. These objectives are included in the AoS Framework.
NRW response to questions – 8. Are the indicators for each objective suitable? If not please suggest alternatives.		
NRW	No additional comments	

NRW response to questions – 9. Do you have any comments on the sources of potentially significant effect for each of the activities covered by the draft plan/programme, including whether they should be scoped in or out of assessment in the Environmental Report?		
NRW	<p>Invasive & non-native species (INNS)</p> <p>The introduction of INNS by plan activities are a potential source of effect that requires consideration. Records of non-natives recorded in Wales are available via the Welsh INNS portal which supplements the GB Non-native Species Information Portal.</p> <p>See also our comments relating to INNS and SoNaRR in response to question 2.</p>	Comment noted.
NRW	<p>In-combination and cumulative effects</p> <p>There is no indication in the SR about how an assessment of in-combination and cumulative effects will be approached but, as a clear risk of the multiple activities governed by the plan, this will be necessary.</p> <p>It may be helpful to review any outputs from the UK Cumulative Effects Framework managed by the Centre for Ecology & Hydrology.</p>	In-combination and cumulative effects assessment undertaken in the AoS Report.
NRW	<p>Assessment Envelopes</p> <p>NRW has developed positions on the assessment of risks to marine mammals to explain the application of marine mammal management units (MMMU's) (as a generalised approach for HRA and other assessment) and the definition of adverse effects on site integrity (particularly in relation to collision/removals from marine industry and HRA). Both positions recommend the use of MMMU's as the scale for assessment and these are very similar to the regional sea scales used by the SEA (although the spatial areas don't quite coincide). These positions are not yet available on our website but we have forwarded them separately.</p> <p>It may be helpful to define a list of assessment principles and criteria similar to that adopted by The Crown Estate to inform the screening of sites and activities as part of the Habitats Regulations Assessments of their plans. Documents that summarise the assessment principles have been prepared and should be available from The Crown Estate.</p>	Comment noted but the SEA is non-locational as a result of the NPSs being non-locational too.
NRW	<p>Carbon Sinks</p> <p>There is growing evidence of the importance of blue carbon sinks for storing greenhouse gases, disrupting sinks may therefore be an impact of concern – especially for more coastal developments. NRW has undertaken preliminary work to understand the opportunity for Blue Carbon Sink Potential in Welsh waters and it may be helpful to consider this and other emerging work to understand the significance of any impacts on this resource.</p>	Comment noted. Carbon sinks have been considered in the AoS Report.

NRW response to questions – 10. Are there any additional information sources or existing monitoring arrangements which could be used to inform monitoring of the offshore energy draft plan/programme?		
NRW	Article 17 reporting The status of habitats and species listed in the Habitats Directive that form the National Sites Network is published on the JNCC website: https://jncc.gov.uk/our-work/article-17-habitatsdirective-report-2019/ . Although these reports summarise status at the UK level, the annexes should also be referred to as they provide information that is specific to Wales.	Comment noted.
NRW	SoNaRR SoNaRR reporting (see response to question 2) could be used to assess changes in the state of the Welsh marine environment on a timescale that would roughly coincide with cycles of future OESEA's	Comment noted.
NRW	UK Marine Strategy There is very little mention of the UK Marine Strategy in the SR. Part 1 – Assessment of UK Seas – was updated in 2019 and is relevant. All assessment data is published on the Marine Online Assessment Tool. MSFD sub-regions are an amalgamation of regional seas: Greater North Seas = regional seas 1-3; Celtic Seas = 4-11	Comment noted - UK Marine Strategy included within Table 4. Key objectives noted as well as the implications for the AoS.
NRW response to questions – 11. Do you have any comments on the proposed approach to consultation?		
NRW	Consultation timescales It will be helpful to avoid periods of consultation on other related plans such as Habitats Regulations Assessment of plans for leasing of sea bed areas for aggregates and Round 4 offshore wind – all of which typically draw on advice from the same individuals within consultee organisations - and to avoid common holidays. The current consultation coincides with TCE consultations on the R4 HRA and on aggregates and with Easter holidays which has hampered our ability to respond.	Comment noted.
NRW	Geographical extent of NRW's advisory responsibilities NRW is able to advise on effects on receptors within Welsh Territorial Waters. Advice should be sought from Natural England, Nature Scot and DAERA on English, Scottish and Northern Ireland's territorial waters respectively. JNCC can advise on effects beyond 12nm for the UK.	Comment noted.
NRW	Other comments on the scoping report	
	Section 5.4.5 Regional Sea 6 should reference SPA designations alongside SACs and MCZs especially those with marine components	MCZs referenced in AoS.

NRW	5.5.6 Declines in Bird Numbers focuses on the East coast, Scotland and Northern Ireland, but fails to mention Wales. SoNaRR includes information indicating similar decreases in gulls such as lesser black-backed gull, herring gull, fulmars and kittiwakes (and an increase in great blackbacked gull), there are also declines in shag over the last 20 years, whilst auks, shearwaters and gannets are doing well and storm petrel numbers appear to be stable.	Comment noted.
NRW	Section 6.1 (p113) 'The evidence base regarding the relative risks and potential for significant effects from offshore wind farm, offshore oil and gas exploration and production, hydrogen and gas transportation and storage including of carbon dioxide' (p113) should include reference to other renewables technologies.	Comment noted.
NRW	Potential Sources of Effect (p126) 'Other indirect physical effects on seabed and water column' should also cover effects at the coast.	Comment noted – but applies to OESEA 4 SR
NRW	Table 6.2: Sources of Potentially Significant Effect against Plan Level Activities. There is also potential collision risk for diving birds from tidal range turbines.	comment noted – not applicable at this strategic level in the absence of project locational data
NRW	Table 6.3: SEA Indicators and Related Monitoring. Outcomes for SSSI's should also be included as a biodiversity indicator.	Comment noted.
NRW	Fish of conservation importance. Whilst there are references to pressures on fish stocks (section 5.5.5) and there is some discussion of fish that are Annex II features under the Habitats Directive (section 5.5.9), there are other fish that are of conservation importance either because they are included within lists of species of principal importance (under Section 7 of the Environment Act (Wales), previously Section 42 of the Natural Environment & Rural Communities Act) or because they are an important food resource for other important species. We have forwarded the list of 'section 7 species' separately	Comment noted.
NRW Response to review of UK National Policy Statements - Appraisal of Sustainability (AoS) scoping document		
1: Are there other plans, programmes or environmental protection objectives that should be identified and reviewed as part of the AoS process (Appendix A)?		
NRW	<ul style="list-style-type: none"> The Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009 Water Quality for WFD (now Water Framework Regulations) is mentioned. Also need to have consideration for Quantity (and other parameters of status, eg fish) Will need to take consideration of CCRA3 when available – including water availability Climate Change Risk Assessment 2022 - Climate Change Committee (theccc.org.uk) 	Comments noted – plans and policies added or updated within AoS-1.

	<ul style="list-style-type: none"> • NRW Area Statements should also be considered • Future Wales: The National Plan 2040 • UK Offshore Energy Plan (& SEA) • We note that Water Resources Act 1991 is identified. However, the appendices only refer to Environment Agency role. – reference should also be made to Natural Resources Wales' role). • The Water Act 2014 should be included • Note that Phase 1 and 2 of multi sector demand report (Wales) and equivalent for Defra looked in part at Energy Water use • JEP reports on Energy UK website • JEP18WTB03: Water Use at Thermal Power Plant by MJ Booth and N A Edwards, UTG/19/PMP/486/R https://www.energyuk.org.uk/publication.html?task=file.download&id=7466 • JEP19WTB03: Scenarios for the Projection to 2050 of Water Use by Power Producers – with a focus on WRE by U Gasparino & N Edwards, ENV/660/2020 Context explained: https://www.energyuk.org.uk/publication.html?task=file.download&id=7665 • Full report: https://www.energyuk.org.uk/publication.html?task=file.download&id=7666 • National Strategy for Flood and Coastal Erosion Risk Management in Wales (2011) has been superseded by the 2020 version. • Prosperity for all: A climate conscious Wales • Adapting to Climate Change: Guidance for Flood and Coastal Erosion Risk Management Authorities in Wales (2021) • Guidance for flood consequence assessments: climate change allowances (2016) note: this is due for an update in the near future. • Please note that TAN14 will be combined with TAN15 in a revised document due to be published in September 2021 by Welsh Government • The 2008 Wales Transport Strategy has also been updated Llwybr Newydd: the Wales Transport Strategy 2021 • The Wellbeing of Future Generations Act is referenced and described in Appendix A, but does not make reference to Well-being plans that are developed by Public Service Boards under this legislation, and risks therefore missing linkages to specific local needs with respect to the wellbeing goals. 	
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NRW	<p>Appendix A, Table 2.</p> <ul style="list-style-type: none"> • It would be helpful for this table (National) to be clear which plans, policies and legislation are England and Wales or just specific to England. For example, the 25Year Environment Plan, 2018 and Natural Environment White Paper (2011) is applicable to England only. Others listed here are also just relevant to England. It would be better to list them under the 'England' heading rather than National as it is misleading. • The Flood and Water Management Act 2010 is listed twice but has different information under the column 'key objectives/targets/guidance'. These should be combined under a single reference. • PPW reference is out of date. It currently references edition 9 published in 2016. Edition 11 was published in February 2021 • As above, National FCERM strategy should be 2020 reference. • The appendix refers to the draft Welsh National Marine Plan rather than the final 2019 version 	<p>Regional Plans and policies moved to table 5 'Regional Policies' within App C as required.</p> <p>Duplicate removed - Single reference to Act made.</p> <p>Reference updated to 2021.</p> <p>Policy updated.</p> <p>Final Plan referenced.</p>
NRW	<p>Annex B</p> <p><i>Soils, Geology, and Land Use:</i></p> <p><i>Contaminated Land</i></p> <ul style="list-style-type: none"> • We recommend highlighting that this captures formally designated contaminated land but there will be lots of other brownfield sites which are contaminated and require remediation. They will have been assessed for designation or don't meet the threshold for designation but still pose a risk of pollution and harm. <p><i>Water Quality and Resources:</i></p> <p><i>Water Framework Directive (WFD)</i></p> <ul style="list-style-type: none"> • Reference is missing to groundwater body classification status. This is available from the relevant river basin management plans <p><i>Biodiversity and the Natural Environment</i></p> <ul style="list-style-type: none"> • Section 3.3.1 – would benefit from a reference to supporting ecosystem resilience upfront (as per the Environment (Wales) Act 2016) 	<p>Text included within Appendix D – 'Soils, Geology, and Land Use: Contaminated Land' section</p> <p>Groundwater classifications for England, Scotland, Wales and NI provided within the Baseline (Appendix D)</p> <p>Comment noted and added to Environmental theme in main AoS report.</p>

	<p><i>Adapting to a Changing Climate and Flooding</i></p> <ul style="list-style-type: none"> • Section 3.3.4 – should refer to Shoreline Management Plans as well as Flood Risk Management Plans and should also refer to support actions for adaptation to climate change as identified in these plans. 	Comment noted and added to Environmental theme in main AoS Report.
2: Is there additional information that needs to be considered as part of the baseline data?		
NRW	<p>We recommend that Sites of Special Scientific Interest (England, Scotland, Wales) and Areas of Special Scientific Interest (Northern Ireland) are included as part of the baseline data. Also:</p> <ul style="list-style-type: none"> • UNESCO Global Geoparks • British Geological Survey geological maps • Local Authority contaminated land registers • Species of Principal Importance – Section 7 of the Environment (Wales) Act 2016 <p>We recommend how the baseline might evolve over the life of the NPS is considered. The Welsh Government's Marine Conservation Zone designation programme should be referenced as a potential evolution of the baseline as this will lead to further marine designations over time.</p>	<p>Baseline data updated to include required information within Appendix D – Biodiversity and Ecosystems: SSSI, ASSIs</p> <p>Soils, Geology and Land use – Geoparks</p> <p>Note made that contaminated land is best identified on a local basis and that the LAs maintain the Public Registers.</p> <p>Reference included in App D – Biodiversity and Ecosystems: MCZs</p>
NRW	<p>Section 4 Table 4.1</p> <p>Climate change topic, 'predicted changes to temperature and weather patterns' is included as baseline information. This should be expanded to also include predicted sea level rise and or fluvial uplifts. This would correspond to the information provided in Appendix C.</p> <p>Flood risk and coastal change topic, there is nothing in the baseline information for coastal change. Coastal change management areas and SMP policy areas provide useful baseline information and SMPs are referenced in Appendix C. We recommend to include these in the main document.</p>	<p>Comment noted – addressed within key issues of AoS.</p> <p>Details of SMPs provided within Baseline</p>
	<p>Annex C</p> <p>The reference against flood risk and coastal change (footnote 185) directs to the EA maps only, yet the text covers Wales. The equivalent reference to the NRW website flood maps/DAM should</p>	Comment noted. Link to website provided within report.

	<p>also be included. Also, by 31st Aug 2021, for planning purposes the flood zones between England and Wales will differ slightly with flood zone 3 in Wales indicating the Tidal200yr/ fluvial100yr flood outline plus climate change (based on a central allowance) and flood zone 2 will be the 1000yr outline plus climate change.</p> <p>In the table in Appendix C, facts are provided for properties at risk in England and Scotland but not for Wales or Northern Ireland. This should be included for consistency. The following is stated in the National FCERM Strategy for Wales 2020 <i>“Across Wales over 245,000 properties are at risk of flooding from rivers, the sea and surface water¹ with almost 400 properties also at risk from coastal erosion”</i></p> <p>We advise caution with the statement made that the highland regions, such as Snowdonia and the Brecon Beacons, have less risk of flooding. Parts of Snowdonia have experienced significant flooding in recent years, including Llanwrst, Llanberis, Capel Curig.... Similarly, recent flooding (Storm Dennis saw flooding across Brecon). The suggestion they are at less risk of flooding is in danger downplaying the risk.</p>	Comments noted.
3: Do you consider that the range of sustainability problems and issues covered is appropriate?		
NRW	<p>The document covers England and Wales (and applies other parts UK where relevant). As it covers Wales the AoS should also consider Welsh legislation requirements (this is an omission). Despite mentioning both the Environment (Wales) Act and Wellbeing of Future Generations Act, their requirements are not reflected in the AoS assessment criteria. We advise the assessment criteria should consider how NPS for Energy would:</p> <ul style="list-style-type: none"> • consider the Environment (Wales) Act 2016 – Section 6 biodiversity and resilience of ecosystems duty, and habitats and species of principle importance (Section 7) • consider the Well-being of Future Generations (Wales) Act 2015 – taking action in accordance with the sustainable development principle so that the well-being goals are achieved <p>Therefore the AoS should consider the following principles when considering Welsh legislation:</p> <ul style="list-style-type: none"> • <u>Deliver demonstrable benefit for the environment and people</u> – should enhance biodiversity, in so doing promote the resilience of ecosystems and contribute to sustainable development within Wales. • <u>Consider the appropriate scale</u> –take an approach that reflects the size and complexity of your problem. Approach and actions should be proportionate, reflecting both the natural system and the human system impacted. Should consider the temporal impacts of actions and take a long-term view in relation to any interventions (or the impact of non intervention). 	These are considerations in the AoS Report where applicable.

	<ul style="list-style-type: none"> • <u>Consider multiple benefits</u> – should actively seek opportunities to deliver multiple benefits within your planning and optioneering. Benefits could include improvements to water quality, flood risk management, reduced emissions of greenhouse gases or carbon sequestration. look for these benefits across different sectors in addition to maximising the benefits for people and the environment. • <u>Use a collaborative approach</u> – should work with others to gain a shared understanding of natural capital assets, resources and the benefits provided. • <u>Take account of all relevant evidence</u> – You should consider all relevant social, cultural, economic and environmental evidence, clearly showing assumptions and areas of bias. <p>As a general comment we recommend that the paucity of information (especially about the marine environment and innovative technologies) is noted i.e. that this creates uncertainty and hampers decision-making.</p>	
4: Are there any changes you consider should be made to the proposed AoS objectives and guide questions?		
NRW	<p>For Wales, an old version of PPW is referenced (Edition 9, 2016). This should be updated to reflect PPW Edition 11, 2021. The AoS objectives against this should also include objectives that support sustainable and resilient development.</p> <p>TAN14 - it notes this is directly relevant to the new NPS but it should be noted that this will be amended and combined with TAN15 later this year (2021). The objectives should also address coastal change and coastal erosion which is not currently identified.</p> <p>TAN15 – the AoS objectives should include objectives to manage flood risk from all sources, not just surface-water runoff. One of the objectives of the TAN is missing which is to ensure new development does not cause or exacerbate flood risk elsewhere.</p> <p>The National Strategy for Flood and Coastal Erosion risk management should reference the most recent version (2021) and not the 2011 one. The overarching objectives of the FCERM strategy need to be checked to ensure they are reflective of the new strategy. Furthermore, the objectives set out for the AoS seem to relate to coastal erosion risk management only. This should be expanded to cover the breadth of the National FCERM Strategy policy/delivery framework.</p> <p>Shoreline Management Plans – The AoS objective should align with the SMP aim and SMP policies</p>	<p>Plans and policies updated accordingly.</p> <p>SMPs included within Table 4 with a requirement to ensure that flood and coastal erosion risk is included as an on objective in the AoS.</p>
5: Do you have further suggestions regarding the scope of the AoS and its proposed assessment of the reviewed NPS?		

NRW	Energy needs to consider water availability in more detail (than suggested in this report). For example there no mention of water resources management plans, drought plans (and link to regional planning). In undertaking the assessments of the NPS it would be useful to cross-reference with the assessment work of the Offshore Energy SEA to ensure nothing is missed from an offshore perspective as the scope of the NPS and Offshore Energy Plans overlap significantly and because these processes are running almost simultaneously. Attached is our response to the OESEA4 scoping report for reference purposes.	Comment noted – Key AoS themes updated to reflect
Habitats Regulations Assessment (HRA) methodology		
NRW	NOTE A SERIES OF COMMENTS ON THE HRA WERE RECEIVED – PLEASE SEE HRA FOR DETAIL.	

B.2. Responses made via first Public Consultation on NPSs and AoS (2022)

The following sets out comments received to a series of questions posed during consultation in relation to the AoS and the AoS response. For responses made in respect of the NPS, please see the NPS response document.

Q23a. Do you have any comments on the AoS findings for the draft Overarching NPS for Energy (EN-1)?

Organisation	Comment	Response
The East Beach Residents Assoc. & Littlehampton Society	Concerns over energy security particularly during transition to wind and solar – suggest that ref. in AoS re. this issue is vague (Para. 1.7.4) Concerns that NPS does not reflect pillars of sustainability particularly in respect of offshore windfarms – ref. OESEA advice on visual buffers. Suggestions in relation to rewording certain elements made	Landscape and visual impacts are covered in Section 5.10 of EN-1. Section 2.35 in EN3 specifically addresses seascapes and visual effects relating to offshore wind. The NPS has also been updated to reflect the latest Offshore Energy SEA.
Dept. Agriculture Environment and Rural Affairs (DAERA NI)	Issue of Transboundary effects Reference to draft Marine Plan for Northern Ireland	List of PPPs revised to include draft Marine Plan for Northern Ireland and clarification in relation to Transboundary effects in the four nations within the United Kingdom has been added to section 11.3 of the AoS Report.
Forestry Commission	Development consent should not be granted for development that results in the loss or deterioration of irreplaceable habitats, including ancient woodland, and ancient and veteran trees, unless there are wholly exceptional reasons, and a suitable compensation strategy exists. Direct and indirect effects across all phases of development should be addressed. SoS should ensure appropriate weight is attached to Ancient Woodlands etc. AoS should also include ref. to Ancient and Veteran trees and other non-ancient woodlands that cannot easily be replaced. Note that baseline datasets are incomplete.	List of PPPs in Table 4-1 and Appendix C updated to include England Trees Action Plan and Nature for Climate Fund and these recent commitments reflected in the revised AoS Framework. Reference to irreplaceable habitats such as Ancient Woodlands and Veteran Trees as per Forestry comments has been added to Table 4-4 under Biodiversity and reflected in the revised AoS framework in a new guide question for the Biodiversity objective.

	Need to reference England Tree Action Plan and Nature for Climate Fund.	
Federal Maritime and Hydrographic Agency (Germany)	Potential for Transboundary effects from deployment of renewable energy in the form of offshore wind energy and related infrastructure in the North Sea. Consideration to be given to involve German authorities should it potentially cause significant adverse effects on a protected site in the German EEZ, in particular if compensation measures are being considered instead of prevention or mitigation measures. This also applies to potential adverse effects on human activities in the German EEZ area beyond fisheries, e.g. on navigation, wind energy, grid connection and other.	Transboundary effects from offshore wind farms already addressed in the AoS and Germany is one of countries that should be consulted on the potential for significant environmental effect from implementation of the NPS. The AoS now clearly recognises that there are other potential effects on human activities alongside effects on marine biodiversity.
Environment Agency	<p>The draft Overarching NPS for Energy (EN-1)?</p> <p>Comments on AoS Objective 2: Maximise adaptation and resilience to climate change</p> <ul style="list-style-type: none"> • The adaptation requirements in section 4.9 of EN-1 are too loosely defined and discretionary: <ul style="list-style-type: none"> o There is a need to ensure adaptation is focused on how today's extreme weather events will change as a result of climate change, rather than general changes in climate (such as 'warmer, wetter winters'). Otherwise there is a danger adaptation measures will not be robust. o There is also a need to be clearer on built in resilience vs. future adaptation. Future adaptation measures are only reasonable for long term and very extreme scenarios, and where implementing them now could be problematic (due to wider impacts and/or extreme impact on viability or feasibility). Guidance is also needed to show there is a clear plan for future adaptation – e.g. secured with DCO requirements (DCO version of planning conditions). If this is unclear there is a danger short to medium term adaptation will be left for later implementation, which may not be delivered or be deliverable, risking future resilience. 	Noted - The AoS Framework was adjusted to better reflect the issues raised and assessment results in relation to Objective 2, adaptation to climate change, are set out in AoS Section 2.

	<p>o While EN1 climate change adaptation section with the flood risk and coastal change sections and supporting EA guidance provide a robust approach to adapting to flood risk and coastal change, wider climate risks are less well supported. In particular there is a lack of reference to managing risks related to periods of limited water availability. It is possible limitations of abstraction could mean energy infrastructure may have to cease to operate for periods of time and abstraction could cause environmental damage, including for sites with legal habitats and water protections (e.g. SSSIs, SACs, Water Framework Directive etc.).</p>	
	<ul style="list-style-type: none"> • The supporting sustainability analysis for AoS Objective 2: 'Maximise adaptation and resilience to climate change' is very narrowly focussed on flood risk and direct impacts, to the exclusion of other risks and indirect risks to the development, and knock-on risks to the adaptation of other parties/habitats. There is a lack of reference to managing risks related to periods of limited water availability in EN1 and this issue is not recognised in AoS objective 2. 	<p>Table 4-4 has been revised to include direct and indirect climate risks to energy infrastructure: river surface and groundwater flooding; coastal flooding and erosion damage; heatwaves, wildfires, reduced water availability and soil desiccation.</p> <p>AoS Objective 2 on Adaptation and Resilience has been clarified to apply to new energy development- and questions expanded to require:</p> <ul style="list-style-type: none"> • energy infrastructure that is resilient and adapted to the risks of climate change over its lifetime: increased river, surface and groundwater flooding due to extreme winter rainfall events and increase in winter mean rainfall and increased coastal flooding and erosion damage due to sea level rise and storms • risks associated with flooding over the energy infrastructure's lifetime to be managed without increasing the flood risk elsewhere and identifying opportunities to reduce the risk overall, including through working with nature based solutions? • avoidance of development in areas likely to be affected by coastal erosion or where this is not possible ensure that

		<p>coastal change can be managed throughout the lifetime of the energy infrastructure</p> <ul style="list-style-type: none"> •management of the risks associated to periods of limited water availability over the lifetime of the energy infrastructure •management of the risks associated with heatwaves and wildfires over the lifetime of the energy infrastructure
	<ul style="list-style-type: none"> • Without changes to EN1 to address the above (using the advice we have provided in response to consultation question 2 under comments on section 4.9 'Climate change adaptation' and question 3 under comments on section 5.16 'Water quality and resources'), we disagree with the assessment that EN1 has a significant positive medium to long term impact when assessed under AoS objective 2, and would consider the assessment score for this objective to be a 'likely negative effect'. 	<p>Noted - The AoS Framework was adjusted to better reflect the issues raised and assessment results in relation to Objective 2, adaptation to climate change, are set out in AoS Section 2.</p>
Historic England	<p>1. There is repeated reference in the AoS to the 'built and natural environment', and 'the Built Environment' and 'the Natural Environment' are two of the six sustainable development themes included in the AoS for assessing alternatives. We view as unhelpful the approach used in the AoS to compartmentalise heritage as only a subset of the Built Environment, and for Landscapes and Townscapes to be considered only with reference to the Natural Environment. This is unfortunate and results in assessment that is insufficiently comprehensive.</p>	<p>The six sustainable development themes included in the AoS for assessing alternatives were informed by the themes used in the AoS of the current NPSs to ensure an element of consistency in the approach to assessment of alternatives. This clarification has been added to Section 2.5.</p> <p>However, in the same way that Adaptation and Resilience (AoS 2) has been included to span Built and Natural Environment, it is recognised that elements of Heritage (AoS5) and Landscapes and Townscapes (AoS6) also span the two types of environment. Heritage (AoS5) and Landscapes and Townscapes (AoS6) have been included in both and a revision of the assessments undertaken to check and note any material changes that arise from the revised sustainable development themes.</p>
	<p>2. Paragraph 1.7.4 of EN1, which summarises point from the AoS of EN-1, omits the historic environment. Lack of specific</p>	<p>AoS of EN-1 summary now includes reference to cultural heritage. Detailed assessment is made in respect of</p>

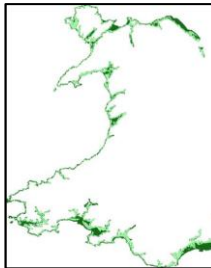
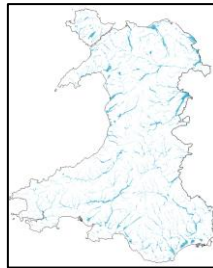
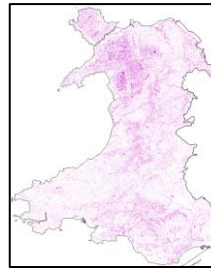
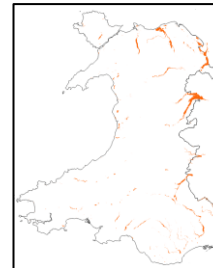
	reference to culture and the historic environment suggests that the conclusions from the AoS of EN-1 are insufficiently clear.	Objective 5 Protect and enhance cultural heritage assets and their setting, and the wider historic environment.
3.	Paragraph 5.6.3 in the AoS for EN-1 concludes that there is the potential for “minor negative effects (including cumulative effects) on heritage assets in the short, medium and long term as a result of the potential impacts on heritage assets and their settings”. It goes on to acknowledge that a lot is site specific. There is scope for significant negative effects in some locations and minor effects in others, and this should be acknowledged in the headline conclusions made, both in the AoS and in EN-1.	The AoS notes that there is a degree of uncertainty around extent and significance of effect as this is dependent on the nature and precise location of the infrastructure.
4.	The proposed indicator for monitoring the historic environment “no of assets impacted by new energy schemes” is not meaningful as a measure to indicate how heritage assets have been lost, protected or conserved. Historic England suggests an indicator that measures change to heritage assets compared to a baseline assessment. An indicator that measures the number of heritage assets that are placed on or removed from the Heritage at Risk register as a result of development is also recommended.	Included the two indicators that Historic England suggests in the Monitoring Framework.
5.	Note that the information source should be Historic England, not English Heritage.	Corrected in Table 12-1
6.	The key findings from the AoS for EN-1 on page 8 focus on the inevitability of harm to heritage and the limited ability for landscape/townscape/seascape mitigation. While a balanced approach to decision making is always required, this lowers the bar for assessing heritage. The AoS, again on page 8, does go on to state that the significance of such effects and potential mitigation possibilities is largely uncertain at the strategic and non-site-specific stages of EN1-5 which is a helpful caveat. However, an overarching vision which sees harm as inevitable and sees mitigation as being limited does, to an extent, prejudice the ability of important heritage considerations to be dealt with at a more detailed, locational stage. The wording of EN1 and AoS could be changed to shift the tone of the text to	The NPS sets out that any harm or loss of significance of a designated heritage asset (from its alteration or destruction, or from development within its setting) should require clear and convincing justification. It also states that substantial harm to or loss of significance of a grade II Listed Building or a grade II Registered Park or Garden should be exceptional. Substantial harm to or loss of significance of assets of the highest significance, including Scheduled Monuments; Protected Wreck Sites; Registered Battlefields; grade I and II* Listed Buildings; grade I and II* Registered Parks and Gardens; and World Heritage Sites, should be wholly exceptional.

	talk about a balanced approach rather than one that implies built in harm from the outset. This aligns with the concept of sustainable development being that which also seeks to conserve the historic environment.	It is therefore anticipated that harm will only occur in exceptional circumstances and the AoS assessment reflects this approach.
	7. Reference is made on pages 43 and 44 of the AoS, and indeed elsewhere in the AoS, to Historic Battlefields and Parks and Gardens. To avoid confusion and align with the NPPF, Historic England suggests these entries are amended to 'Registered Battlefields' and 'Registered Parks and Gardens'.	Corrections made throughout report.
	8. On page 94 of the AoS, reference is made to negative cumulative effects on the setting of heritage assets. As stated in the Historic England Advice Note on commercial renewable energy development: "Cumulative heritage impacts are frequently linked with setting, but they can also apply to physical impacts that ultimately may result in a change to the significance of a heritage asset; for example, a development may have hydrological impacts that cause changes to the groundwater level which in turn affects the preservation of waterlogged archaeological remains."	Text amended to reflect that there is potential for negative cumulative effects on the setting of heritage assets as well as physical impacts that ultimately may result in a change to the significance of heritage assets.
CPRE, the countryside charity	<p>Yes. We believe that, in relation to the consideration of alternatives, the AoS in general underestimated the scope of energy demand reduction and distributed energy, which in turn has led to a skewed weighting of need for energy supply. We refer in particular to recent research by CREDS* which suggested greatly enhanced scope for reducing overall energy demand (by up to 50%), compared with current Government projections.</p> <p>*Barrett, J., Pye, S., Betts-Davies, S., Eyre, N., Broad, O., Price, J., Norman, J., Anable, J., Bennett, G., Brand, C., Carr-Whitworth, R., Marsden, G., Oreszczyn, T., Giesekam, J., Garvey, A., Ruyssevelt, P. and Scott, K. 2021. The role of energy demand reduction in achieving net-zero in the UK.</p>	<p>We note that EN-1 sets out the Government's policy for delivery of major energy infrastructure. A further five technology specific NPSs for the energy sector cover: natural gas electricity generation (EN-2); renewable electricity generation (both onshore and offshore) (EN3); gas supply infrastructure and gas and oil pipelines (EN-4); the electricity transmission and distribution network (EN-5); and nuclear electricity generation (EN6).</p> <p>The Energy NPSs have effect for the decisions by the Secretary of State on applications for energy developments that are nationally significant under the Planning Act 2008 and covers the following NSIPs:</p> <ul style="list-style-type: none"> - electricity generating stations, (meeting the thresholds set out in the Planning Act 2008). This includes onshore generating stations (but not onshore wind)

	<p>Centre for Research into Energy Demand Solutions. Oxford, UK. ISBN: 978-1-913299-11-8</p>	<p>generating more than 50 megawatts in England and 350 megawatts in Wales. It also includes offshore generating stations generating more than 100 megawatts offshore in territorial waters adjacent to England and within the English part of the Renewable Energy Zone and those generating more than 350 megawatts in territorial waters adjacent to Wales and the Welsh part of the Renewable Energy Zone (the Welsh Zone as defined by section 158 of the Government of Wales Act 2006). For these types of infrastructure, this Overarching NPS (EN-1) in conjunction with any of the relevant technology-specific NPSs will be the primary policy for Secretary of State decision making</p> <ul style="list-style-type: none"> - large gas reception and liquefied natural gas (LNG) facilities and underground gas storage facilities (meeting the thresholds set out in the Planning Act 2008). For this infrastructure EN-1 in conjunction with EN-4 (for natural gas only) will be the primary policy for Secretary of State decision making - cross-country gas and oil pipelines and Gas Transporter pipelines (meeting the thresholds and conditions set out in the Planning Act 2008). For this infrastructure EN-1 in conjunction with EN-4 (for natural gas only) will be the primary policy for Secretary of State decision making - above ground electric lines at or above 132kV (meeting the thresholds set out in the Planning Act 2008). For this infrastructure, EN-1 in conjunction with the Electricity Networks NPS (EN-5) will be the primary basis for Secretary of State decision making² <p>Where the need for a particular type of energy infrastructure set out above is established by this NPS, but that type of infrastructure is outside the scope of one of the technology specific NPSs, this NPS will have effect alone and will be the</p>
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		<p>primary basis for Secretary of State's decision making. This will be the case for, but is not limited to, hydrogen pipeline and storage infrastructure, Carbon Capture Storage (CCS) pipeline infrastructure and other forms of low carbon generation infrastructure not included in EN-2 or EN-3.</p> <p>As the Energy NPSs are about delivery of major energy supply infrastructure and do not cover energy demand reduction nor distributed energy, these cannot be influenced through the AoS of the Energy NPSs alternatives.</p>
Isle of Anglesey County Council	<p>The Council considers that the Appraisal of Sustainability does not entirely align with projects being able to demonstrate that they are sustainable development. The AoS states it is intended to "inform consultation on the draft NPSs by providing an analysis of the environmental, social and economic impacts of implementing the energy NPSs" but then goes on to say in relation to the technologies covered by EN-3 that "The non-generic effects have been found to be generally negative across short, medium and long terms, though there are some elements of positivity in respect of the need to promote sustainable use of resources and natural assets". It is unclear how an assessment of generally adverse effects demonstrates sustainability.</p>	<p>The AoS recognises that there will be effects from the NSIPs but for the most part these are not significant and reflect the mitigation approach set out in EN-1. It is considered that the application of such mitigation will likely result in minimum residual effects. All such issues would be considered in much greater detail through processes such as Environmental Impact Assessment, the need for which is set out in EN-1.</p>
Natural England	<p>We are disappointed that the comments we made on the consultation regarding the methodology for the AOS have not been reflected in the AOS. We have not reproduced them in this response and would refer you back to our response dated 30 April 2021. We would note that the National Planning Policy Framework was been updated in July 2021 and the documents contained throughout the whole of this consultation have not been updated in line with the revisions made. 25 Year Environment Plan targets have similarly not been fully integrated and worked through including via the findings of the AoS.</p>	<p>Natural England comments on the Scoping Report have now been considered in full (see separate Scoping Report consultation comments table).</p> <p>The National Planning Policy Framework which sets out the government's planning policies for England was revised on the 20th of July 2021 and the most relevant changes in the context of the Energy NPSs have been set in Appendix and also in the report. Equally, the targets within the 25 Year Environment Plan have been set out and the AoS Framework aligned to reflect these.</p>

	<p>For example, the 25YEP target is for all soils to be managed sustainably by 2030. The impacts on BMV agricultural land and soil resource have then subsequently not been picked up in the list of potentially significant effects although EN-3 itself does itself reflect the special considerations needed when considering ground mounted solar PV installations.</p> <p>There will be subsequent Environment Act targets and policy that will need to be considered prior to the designation of the National Policy Statements.</p>	
Natural Resources Wales	<p>We submit here our formal response as agreed by 13th December 2021.</p> <p>We welcome that our previous comments have largely been addressed. However, we do have further comments as follows. These comments apply in the context of EN-1, EN-3 and EN-4 as these are the only documents that we have had time and resources to review:</p> <p>4.1 Review of Plans, Programmes and Policies</p> <p>Table 4.1 – The review of plans, programmes and policies should include: ‘Valued and Resilient: The Welsh Government’s Priorities for Areas of Outstanding Natural Beauty and National Parks’ July 2018Page 39 - Under the heading Adaptation to a Changing Climate and Flooding, we suggest reference is made to supporting the objectives of the National Flood and Coastal Erosion Risk Management Strategy and TAN15.</p>	<p>PPP reviewed and added to Table 4.1 and Appendix.</p> <p>Reference to National Flood and Coastal Erosion Risk Management Strategy and TAN15 has been introduced under the heading Adaptation to a Changing Climate.</p>
	<p>4.2 Summary of baseline information</p> <p>Table 4.2 (Page 43) Cultural Heritage: Please add Registered Historic Landscapes (Wales)</p> <p>Table 4.2 Page 43) Landscape: Add National Landscape Character Areas (Wales), Seascapes (Wales), Tranquillity Maps (Wales) and Dark Sky reserves (Wales)</p>	<p>Added</p>
	<p>Table 4.3- Key designations and land use across the UK</p>	<p>Flood zones for Wales already included in table 4.3 along with flood zones for England and Scotland.</p>

	<p>Table 4.3 (Page 44) – Only the flood zones for England and Flood Risk Areas for Northern Ireland are shown. We request that the Flood Map for Wales is referenced here too as it is a material consideration given it will show current available information on flood risk in Wales.</p>	<p>Flood Mapping for Planning¹ was published in December 2022 mapping has been reproduced below for information.</p>			
					
		<p>Flood Map for Planning: Sea Flood Zones</p>	<p>Flood Map for Planning: River Flood Zones</p>	<p>Flood Map for Planning: Surface Water and Small Watercourses Flood Zones</p>	<p>Flood Map for Planning: Recorded Flood Extent</p>
	<p>Table 4.4 Baseline evolution</p> <p>Page 46 – Biodiversity – We consider that reference should be made to the stepwise approach advocated in Planning Policy Wales paragraph 6.4.21 for schemes in Wales or that may affect Wales. We also recommend that opportunities for nature-based solutions are included as part of the implications and opportunities identified for the Energy National Policy Statements.</p> <p>Also, we recommend that reference to Welsh Government’s approach to net benefit for biodiversity, as opposed to net gain, as advocated in Planning Policy Wales is included in the implications and opportunities identified for the Energy National Policy Statement for schemes in Wales. Planning Policy Wales paragraph 6.4.5 states that there is a Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty): ‘Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or</p>	<p>Table 4.4 aligned Planning Policy Wales for schemes in Wales or that may affect Wales.</p> <p>In Wales and for development proposals that may affect Wales, planning authorities must follow a stepwise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for; enhancement must be secured wherever possible. Finally, where the adverse effect on the environment clearly outweighs other material considerations, the development should be refused.</p> <p>Nature-based solutions added and cross-referenced to adaptation to a changing climate issue</p> <p>Reference to net benefit for biodiversity added and approach set out in Table 4-4</p>			

¹ <https://flood-map-for-planning.naturalresources.wales/>

	<p>nationally and must provide a net benefit for biodiversity. In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:</p> <ul style="list-style-type: none"> • diversity between and within ecosystems; • the connections between and within ecosystems; • the scale of ecosystems; • the condition of ecosystems including their structure and functioning; and • the adaptability of ecosystems. <p>In fulfilling this duty, planning authorities must have regard to:</p> <ul style="list-style-type: none"> • the list of habitats and species of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016; • the SoNaRR, published by NRW; and • any Area Statement that covers all or part of the area in which the authority exercises its functions.’ Note that the Secretary of State would fall within the definition of a Planning Authority for the purposes of implementing this duty for assessment of schemes in Wales. <p>The AoS document references protecting Green Infrastructure and where possible to enhance it, whereas Planning Policy Wales talks about the need to do both. We recommend that reference to the need to do both here is strengthened and referenced, in accordance with Planning Policy Wales.</p>	<p>Opportunities with regards to protection and enhancement of Green Infrastructure have clarified in Table 4-6. It is noted that the AoS framework already asks a question about protection and enhancement of Green Infrastructure and this is in accordance with Planning Policy Wales.</p>
	<p>Page 50 - With reference to the section on ‘adaptation to a changing climate’, no reference is made to the increased risk on coastal erosion. More severe weather events will impact on this risk and there is data to show that without implementation of shoreline management plans, over 2000 properties (2126) at risk from coastal erosion in Wales (reduces to 145 properties if there is full implementation of shoreline management plans). We therefore advise that the NPS includes a statement that</p>	<p>Increased risk of coastal erosion has been added to AoS Framework and issues and opportunities in Table 4.4 have been revised to include coastal erosion.</p>

	<p>management options that have been selected as part of a relevant Shoreline Management Plan, should be implemented prior to a scheme proceeding in consultation with Shoreline Management Plan Coastal Groups.</p> <p>Also, this section notes that potential risks from rivers and coastal sources have been identified and mapped, but omits to include risk from surface water. We advise this should be rectified in the AoS accordingly. This source should also be referred to as it is mapped in the Flood Map for Planning in Wales.</p> <p>This section on 'Adaptation to a Changing Climate states "The NPS should seek to ensure that new development minimises any negative effects arising from flooding and avoids where possible areas of highest flood risk" This should reflect national planning policy in Planning Policy Wales that also advises new development shouldn't increase flood risk elsewhere. This is different to 'minimising' negative effects. We advise that the AoS should advocate that the NPS should be clear that there should not be any increase in negative effects arising from flood risk in new development as an aim.</p>	<p>Surface water flooding has now been added to the AoS Framework and explicitly referenced in Table 4.4 Issues and Opportunities.</p> <p>This is already in the AoS Framework and has been strengthened in the Sustainability Issues.</p>
	<p>Page 55 Cultural Heritage – Please include opportunities to reflect Registered Historic Landscapes in sensitive design.</p>	<p>Added</p>
	<p>Pages 56-58 Landscape and Townscape – This should include opportunities to:</p> <ul style="list-style-type: none"> • support designated landscapes' special qualities and management plan objectives; • the settings of designated landscapes; • supporting measures to enhance the resilience of ecosystems at a landscape scale and also to maximise benefits including public access and enjoyment of landscapes; • Opportunities to enhance Seascapes, as well as ways to support functional landscapes e.g. those which reduce flood risk, sequester carbon or offer recreational opportunities in peri urban areas. 	<p>Added plus AoS Framework adjusted to reflect the opportunities.</p>

	<p>Table 4.5 - AoS Objectives and Guide Questions</p> <p>Page 69 Cultural Heritage - Add 'Registered Historic Landscape' to AoS Objective and Guide questions.</p>	Added to Table 4.5, Table 4.4 and Baseline Appendix.
	<p>Page 70 Landscape - Add 'seascapes' reference to the designated landscapes special qualities. In the last bullet point in the guide questions delete 'where' and replace with 'as' to reflect the imperative of the nature emergency and part of the landscape solution.</p> <p>AoS Framework Section 4.3 (pages 68-71)</p> <p>Objective 2 – adaptation isn't just about building walls and flood barriers, it's about understanding current and future risk and combining flood infrastructure with other measures such as better flood warning, better land planning to avoid placing development in risk areas, implementing nature based solutions, policy implementation (e.g. SMPs) etc... the description is too narrow and should include reference to the other measures we advocate here.</p>	<p>Added.</p> <p>Explanations for adaptation and resilience adapted as follows:</p> <p><i>Adaptation is about taking the necessary steps to address the risks of climate change, now and in the future. Resilience is the ability of a system to adsorb and bounce back after an adverse event, now and in the future.</i></p>
RSPB	<p>We welcome the use of the sustainability objectives, particularly objectives 1-4 and the reference in objectives 3 and 4 of the need to enhance, not just protect, biodiversity and sites designated for their international importance for nature conservation.</p> <p>We welcome recognition of the potential from construction and operation activities to have significant negative effects on biodiversity in the short, medium and long term. We also welcome the recognition of the possibility of cumulative negative effects on biodiversity and other environmental features.</p> <p>However, there are flaws which undermine the AoS (and the AoS for EN-2-4). Firstly, it is impossible to properly assess cumulative, in-combination and transboundary effects without an overarching spatial plan. The AoS correctly notes that "the lack</p>	<p>Comment noted.</p> <p>Comment noted.</p> <p>We agree that a spatial approach to energy planning would be extremely helpful, but the Energy NPSs high level policies</p>

<p>of clarity relating to location of infrastructure means it is not possible to be precise as to cumulative, synergistic and indirect effects” (p16). It goes on to conclude “that the significance and nature of cumulative effects may vary with the mix of technology projects proposed and the sensitivities of the receiving communities and environment”, but this is a statement of the obvious. It is not possible for the NPS to address and manage these issues; delegating them to project-level EIA is likely to result in poor environmental outcomes and is an inefficient process even solely from a planning perspective.</p> <p>This is a fundamental problem, particularly in the marine environment where there is no effective spatial planning to fill the gap between the high-level policies of the NPS and individual NSIPs (see also our comments under Q2 and Q9).</p>	<p>do not have a spatial dimension and therefore the AoS has been unable to undertake spatially informed assessments.</p> <p>In terms of energy planning, wider planning processes at regional level conducted to fill in the gap between the high level policies and the individual NSIPs are advisable from an AoS perspective. However, it is not the role of the NPS to address that gap.</p>
<p>Secondly, the assessment of reasonable alternatives is crude. We acknowledge that it is a significant improvement on the consideration of alternatives in the AoS of the original NPS. However, simply subtracting different technology types is unlikely to give very informative results. EN-1 is based on the fundamental premise that a combination of technologies is required, but rather than asking which technologies are ‘in’ or ‘out’, a scenario-based approach would have been much more informative. The key question is really what is an appropriate balance between technologies, and their spatial distribution, and what is the environmental impact of different balances and distributions.</p> <p>Alternative 4 assumes that offshore renewables cannot deploy to their fullest extent due to even stricter protection of the marine environment, which will mean increased reliance on fewer low carbon electricity generating technologies. This is assessed as a large negative effect for net zero, compared to EN-1. This</p>	<p>We thank the recognition that the consideration of alternatives has significantly improved in comparison to the AoS of the original NPS.</p> <p>We note that an alternative consisting wholly of renewables, hydrogen, natural gas with CCS, BECCS and Carbon Capture Utilisation and Storage (CCUS) to deliver Net Zero by 2050 has been analysed in Future Energy Scenarios July 2020 by the National Grid under a range of scenarios. https://www.nationalgrideso.com/document/173821/download</p> <p>The Future Energy Scenarios indicate that certain technologies (ie. nuclear and unabated natural gas) may not be necessary to supply energy in the UK therefore the NPS alternatives were constructed taking this key finding into consideration.</p>

	<p>conclusion depends on a number of questionable assumptions; offshore wind deployment is not necessarily incompatible with stricter protection of the marine environment, nor does stricter protection necessarily imply lower energy output overall. An alternative which could have been explored is one where plan-level Habitats Regulations Assessments for offshore renewables identify the least ecologically-sensitive locations and direct development there.</p> <p>All the alternatives are deemed to be negative for security of energy supply, but this has the effect of weighting the conclusions away from alternatives with lower environmental impacts. Ultimately the choices between alternatives are political choices and should not be left buried in a technical report. In our view, the climate and nature emergency is of such urgency that the purpose of the AoS should be to expose and thoroughly explore all alternatives with lower environmental impacts, without giving pre-eminence to security of supply.</p> <p>We note that the potential for minor positive impacts on biodiversity in the medium to longer term due to environmental enhancements and biodiversity net gain is highly uncertain and should not be relied upon as a mitigating factor.</p>	<p>However, given that the NPSs don't have a spatial dimension this resulted in an AoS unable to undertake assessment of alternatives based on spatial distribution of technologies and corresponding environmental impacts.</p> <p>In view of latest offshore renewable energy policy as stated in the British Energy Security Strategy, alternative 4 is no longer considered to be a realistic alternative and has been removed from the AoS.</p>
	<p>Finally, EN-1 will have effect alone for energy infrastructure that is established by this NPS but is outside the scope of technology specific NPS, such as hydrogen and Carbon Capture and Storage pipeline or storage infrastructure. The technology specific NPS include a range of mitigation measures which act to bolster the approaches outlined in EN-1 to reduce any adverse effects. The use of EN-1 alone means that there is no specific Appraisal of Sustainability for these newer technologies or corresponding specific mitigation measures, so BEIS needs to give further consideration to what further mitigation measures may be necessary.</p>	<p>Commented noted and confirmed that the AoS does not specifically apply to these newer technologies as there are no equivalent technology NPS.</p>
RWE (RWE Generation UK plc, RWE	<p>Appraisal of Sustainability: this is not helpful. It is intended to "inform consultation on the draft NPSs by providing an analysis of the environmental, social and economic impacts of</p>	<p>The AoS recognises that there will be effects from the NSIPs but for the most part these are not significant and reflect the mitigation approach set out in EN-1. It is considered that the</p>

Renewables UK Ltd and related UK Group companies)	implementing the energy NPSSs” but then goes on to say in relation to the technologies covered by EN-3 that “The non-generic effects have been found to be generally negative across short, medium and long terms, though there are some elements of positivity in respect of the need to promote sustainable use of resources and natural assets.” (para 1.7.4). How does this fit with projects being able to demonstrate that they are sustainable development? (paragraph 2.5 EN-1).	application of such mitigation will likely result in minimum residual effects. All such issues would be considered in much greater detail through processes such as Environmental Impact Assessment, the need for which is set out in EN-1.
The Crown Estate	<p>We have not reviewed the AoS in detail but have undertaken a high level review and believe there are a number of opportunities to improve clarity and consistency between sections.</p> <p>It would be helpful to combine the assessment of the 14 Sustainability Objectives in Tables 5-1 to 5-14 into a single summary table, for example in the Non-Technical Summary (NTS).</p> <p>There also appears to be a mis-match between the tone of the AoS for EN-1 and the summary of it in the Non Technical Summary (NTS). For example, regarding AoS Objective 1 (Consistency with the national target of reducing carbon emissions to Net Zero by 2050) paragraph 5.2.3 of the main document concludes that “Minor positive effects are predicted in the short term as unabated combustion technologies are potentially permitted alongside renewables and nuclear technologies. In the medium to long term, the effects become significant positive as earlier unabated combustion technologies get retrofitted with CCS, any new combustion technology is with CCS and renewables make a very significant proportion of the energy mix. Residual emissions from unabated natural gas plants used for peaking could still occur but they will be balanced by Greenhouse Gas Removal technologies.”. However, both the Non-Technical Summary and the AoS for EN-2 to EN-5 concentrate on the negative sustainability impacts, which means that the huge positive contributions of energy</p>	<p>Summary table prepared and presented both in the main report and in the NTS.</p> <p>Note that appropriate summaries are provided in the AoS report.</p>

	technologies such as renewables to AoS Objective 1 are overlooked in these sections of the document.	
Wildlife and Countryside Link	<p>Wildlife and Countryside Link is a coalition of 62 environmental organisations across England, using their strong joint voice for the protection of nature and landscapes. This consultation response is supported by the following Link members: Badger Trust, Buglife, CPRE The countryside charity, Friends of the Earth, League Against Cruel Sports, Open Spaces Society, RSPB, The Wildlife Trusts.</p> <p>This is both a climate and nature emergency. The energy National Policy Statements (NPSs) need to give greater weight to the need to transition away from fossil fuels, including unabated gas. Nationally Significant Infrastructure Projects (NSIPs) that are decided under the framework of NPSs need to protect, enhance and restore biodiversity and landscapes, as well as contribute to zero carbon objectives.</p> <p>Link has identified several overarching concerns with the draft energy NPS and associated Assessment of Sustainability and Habitat Regulations Assessment, including:</p> <p>Lack of strategic, spatial vision and lack of coherence in draft energy NPSs. The lack of an overarching spatial plan makes it impossible to properly assess the environmental impacts of NSIPs. This is particularly the case in the marine environment, where there is no effective strategic spatial planning. Robust Strategic Environmental Assessment is needed at a scale greater than the project level, which must assess cumulative and transboundary effects. On land, it is unclear how draft energy NPSs relate to Local Nature Recovery Strategies, now mandatory through the Environment Act 2021.</p>	<p>We agree that a spatial approach to energy planning would be helpful, but the Energy NPSs high level policies do not have a spatial dimension and therefore the AoS is unable to undertake spatially informed assessments.</p>
	Lack of consideration of carbon emissions. Decision-makers cannot take carbon emissions into account, which will hinder the achievement of zero carbon objectives, other than renewables. Although the Assessment of Sustainability (AoS) considers net	EN-1 to EN-5 consider carbon emissions in numerous aspects. EN-1 requires applicants to undertake a Greenhouse Gas Assessment, with a view to driving down emissions at every stage of the proposed development and ensure that emissions are minimised as far as possible for

	<p>zero and other environmental objectives, they are trumped by the security of supply objective.</p>	<p>the type of technology, taking into account the overall objectives of ensuring our supply of energy always remains secure, reliable and affordable, as we transition to net zero. The AoS has been revisited to consider revisions made to EN-1 with respect to carbon emissions.</p>
	<p>There is a weak consideration of alternatives in the Assessment of Sustainability. Similarly, the AoS concludes that there are no better alternatives to the draft NPS, as concerns about the security of supply override all other issues. Greater weight should be given to reasonable alternatives with lower environmental impacts, and these should not be hidden in a technical report. A scenario-based approach (including due consideration to the existing pipeline of projects) would be more informative than the crude approach to alternatives used in the AoS, and should consider the timescales and mechanics of a just transition.</p>	<p>We note that an alternative consisting wholly of renewables, hydrogen, natural gas with CCS, BECCS and Carbon Capture Utilisation and Storage (CCUS) to deliver Net Zero by 2050 has been analysed in Future Energy Scenarios July 2020 by the National Grid under a range of scenarios. https://www.nationalgrideso.com/document/173821/download</p> <p>The Future Energy Scenarios indicate that certain technologies (ie. nuclear and unabated natural gas) may not be necessary to supply energy in the UK therefore the NPS alternatives were constructed taking this key finding into consideration.</p> <p>However, given that the NPSs don't have a spatial dimension this resulted in an AoS unable to undertake assessment of alternatives based on spatial distribution of technologies and corresponding environmental impacts.</p>
<p>Scottish Power Renewables</p>	<p>We are slightly surprised at the approach adopted, which appears to focus primarily on potential generic impacts from the deployment of different technologies (albeit without spatial definition), rather than testing the implications of policy provisions and seeking to demonstrate that these provisions are likely to be effective at firstly achieving stated policy objectives and secondly ensuring the avoidance of likely significant adverse effects.</p> <p>Section 4 of the AoS Report identifies a reasonably comprehensive list of high-level environmental issues, but it is not clear how these have been carried forward into the AoS or informed NPS development. The assessment findings in Sections 5 to 9 are also limited as these sections merely</p>	<p>The approach adopted for the AoS is justified by the fact that the draft revised ENs were first revised in light of relevant recent policy requirements and stated EN policy objectives; then those revisions were the subject of the AoS.</p> <p>The AoS initially focussed on demonstrating that the AoS Framework's objectives and associated questions had been answered through the EN drafted text and where omissions or inconsistencies were found recommendations were made to address these. It is noted that in many instances the EN text already provide analysis of the issues, drivers, opportunities etc. The recommendations made as the ENs were drafted can be found in the AoS Appendices.</p>

	<p>summarise and in some cases quote, sections of the draft EN-1 – EN-5, rather than analysing these provisions. We would expect the AoS to explain how identified key environmental issues, drivers, implications and opportunities have been addressed in proposed policy provisions and how any reasonable alternatives to these provisions have been considered.</p> <p>The approach also mistakenly considers mitigation as including all policy content related to the environmental topics embodied within individual AoS objectives, rather than explaining in more nuanced terms of key issues have been addressed and potential adverse environmental effects avoided or reduced through the NPS development process to date.</p> <p>Given the need for deployment of offshore wind at scale and pace and the attention given to offshore wind within EN-3, it is particularly disappointing that Section 7.2.1 does not provide a specific assessment of the proposed offshore wind provisions to demonstrate their effectiveness, including examining the extent to which the proposed provisions will support or impede offshore wind deployment at the scale and pace required to achieve the Government's sectoral 40GW target for 2030 and the UK's binding net zero target for 2050. To address this gap, we suggest updated SEA reporting to accompany the finalised suite of energy NPS should present a proportionate assessment of the likely effectiveness and implications of policy provisions within the NPS, including specifically in relation to the proposed offshore wind design, technical, assessment and decision making provisions.</p> <p>Updated AoS reporting should also more clearly demonstrate how the AoS process has informed and improved the development of the revised NPS.</p>	<p>The assessments reported in the AoS Report are of the draft revised ENs as published for consultation already incorporating the recommendations made by the AoS hence quotation of text from the ENs in the AoS.</p> <p>Further short introductory text to highlight particular key issues and potential adverse effects to be added to section 'Anticipated effects' for each AoS objective in AoS-1. Also, the assessments have now been undertaken against each of the revised guide questions to form a more comprehensive view as to how each AoS objective has been addressed.</p> <p>The approach adopted for the AoS is justified by the fact that the draft ENs were first revised in light of relevant recent policy requirements and stated EN policy objectives; then those revisions were the subject of the AoS.</p> <p>The AoS initially focussed on demonstrating that the AoS Framework's objectives and associated questions had been answered through the EN drafted text and where omissions or inconsistencies were found recommendations were made to address these. It is noted that in many instances the EN text already provide analysis of the issues, drivers, opportunities etc. The recommendations can be found in the AoS Appendices.</p> <p>The assessments reported in the AoS Report are of the draft revised ENs as published for consultation already incorporating the recommendations made by the AoS hence quotation of text from the ENs in the AoS.</p>
	<p>The Treasury Green Book was, I understood, the recognised method of assessing public policy. This include the valuation of</p>	<p>The AoS has been informed by the requirements of the Strategic Environmental Assessment (SEA) Regulations 2004 and associated guidance as set out in the AoS report.</p>

	<p>natural capital. I see no evidence this has been included in the AoS</p>	<p>The approach to the AoS followed that used for SEA which is normally to conduct high level and qualitative assessments which result in the provision of recommendations and their incorporation into the strategic level document and a better control over interactions or cumulative effects. AoS including SEA can be informed by other type of assessments, for example Habitats Regulations Assessment (HRA), Carbon Assessments or Natural Capital Valuation if these are undertaken concurrently. The AoS of the NPSs was informed by one single parallel assessment – HRA.</p> <p>The Treasury Green Book provides guidance concerning the provision of objective advice by public servants to decision makers. The guidance sets out a process of assessing the costs, benefits and risks of alternative ways to meet government objectives to help decision makers to understand the potential effects, trade-offs and overall impact of options by providing an objective evidence base for decision making. Such guidance has not been used as part of development of the EN's to consider costs, benefits and risks of NPS alternatives and therefore such results have not been made available to inform the AoS.</p>
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Q23b. Do you have any comments on the AoS findings for the draft NPS for Natural Gas Generating Infrastructure (EN-2)?

Organisation	Comment	Response
Historic England	<p>Assessment in the AoS focuses its consideration on effects on carbon emissions; air pollution; water quality and resources; and biodiversity. AoS objective 5 (Protect and enhance cultural heritage assets and their setting, and the wider historic environment) should be referenced in subsequent assessment, as should consideration of impacts on the historic environment.</p>	<p>The AoS considers that heritage issues in relation to Natural Gas Generating Infrastructure had been addressed via EN-1 and are reported as such.</p>

Isle of Anglesey County Council	The Council considers that the Appraisal of Sustainability does not entirely align with projects being able to demonstrate that they are sustainable development. The AoS states it is intended to “inform consultation on the draft NPSs by providing an analysis of the environmental, social and economic impacts of implementing the energy NPSs” but then goes on to say in relation to the technologies covered by EN-3 that “The non-generic effects have been found to be generally negative across short, medium and long terms, though there are some elements of positivity in respect of the need to promote sustainable use of resources and natural assets”. It is unclear how an assessment of generally adverse effects demonstrates sustainability.	This question has been addressed (see above).
RSPB	See our comments on the AoS findings for EN-1. The AoS considers that both alternatives are adverse on security of supply as they are reliant on unproven technologies such as hydrogen and energy storage at scale. The Government must rapidly bring forward its requirements for CCR in order to make alternative (b) (low carbon-ready gas plant) a more feasible proposition.	Comment noted,

Q23c. Do you have any comments on the AoS findings for the draft NPS for Renewable Energy Infrastructure (EN-3)?

Organisation	Comment	
Historic England	Assessment in the AoS focuses its consideration on effects on carbon emissions; biodiversity; landscape and seascape; air quality; health and wellbeing; economy; and resources. AoS objective 5 (Protect and enhance cultural heritage assets and their setting, and the wider historic environment) should be referenced in subsequent assessment, as should consideration of impacts on the historic environment.	This comment already addressed above.
Isle of Anglesey County Council	The Council considers that the Appraisal of Sustainability does not entirely align with projects being able to demonstrate that they are sustainable development. The AoS states it is intended to “inform consultation on the draft NPSs by providing an analysis of the environmental, social and economic impacts of implementing the energy NPSs” but then goes on to say in relation to the technologies covered by EN-3 that “The non-generic effects have been found to be generally negative across short, medium and long terms, though there are some elements of positivity in respect of the need to promote sustainable use of resources and natural assets”. It is unclear how an assessment of generally adverse effects demonstrates sustainability.	This comment already addressed above.
National Federation of Fishermen's Organisations	-7.2.6.1 refers to the effects from offshore wind farms on commercial fisheries and fishing. Reference to trawling and lining is confused with other types of fishing where it is stated that other types of fishing may be able to take place without being unduly disrupted. We have provided further detailed comments about the compatibility of fishing in answer to question 9.	Regarding offshore wind farms, EN-3 states that the Secretary of State should be satisfied that the site selection process has been undertaken in a way that reasonably minimises adverse effects on fish stocks. Where the Secretary of State considers the wind farm would significantly impede the protection of sustainable fisheries or fishing activity at recognised important fishing grounds, this should be attributed a correspondingly significant weight. The Secretary of State should also consider adverse or beneficial impacts on different types of commercial fishing on a case by case basis. The Secretary of State should be satisfied that the applicant has sought to design the
	- 7.2.6.2 P163 - mitigation is likely to reduce the negative impacts on fishing rather than induce potential medium and long-term positive benefits as is claimed.	
	- 7.4 / 10.2 - Reference to positive effects on fishing (p167, 226) should be explained in the context of having negative effects on other types of fishing due to the hindrance of infrastructure that may provide opportunities for other types. This is not usually a net positive outcome	

	for fishing, rather a change affecting different fishing constituencies and will be case-specific.	proposal with relevant consultees, and tried to minimise the loss of any fishing activities. The Secretary of State will need to consider the extent to which disruption to the fishing industry has been mitigated where reasonably possible. Mitigation proposals should result from detailed consultation with relevant consultees, and mitigation should be designed to enhance where reasonably possible any potential medium and long-term positive benefits to the fishing industry.
The Crown Estate	<p>In line with our comments on the AoS findings for EN-1, we are concerned that the text within the Summary Sections for EN-3 focuses excessively on the negative sustainability impacts, and these statements are then repeated within the Non-Technical Summary where the wider context is lost. Examples including the following statements:</p> <ul style="list-style-type: none"> • “Renewable energy infrastructure development has similar effects to other types of energy infrastructure.” • “The non-generic effects [Carbon Emissions, Biodiversity, Water Environment, Landscape / Seascape, Air Quality, Health, Economy and Resources] have been found to be generally negative across short, medium and long terms, though there are some elements of positivity in respect of the need to promote sustainable use of resources and natural assets.” • “Consistency with the national target of reducing carbon emissions to Net Zero by 2050 is considered significantly negative over the short, medium and long.” We note that the text does then go on to say this is particularly about unabated waste combustion plants, but overall the inclusion of this phrase in the Key Points for EN-3 is misleading. 	Noted - please see revised summary of AoS findings in AoS Report.
	We recommend that the summary Section 7.4 and the NTS should be reviewed to ensure that the overarching positive impacts, which are described in the AoS for EN-1 are adequately reflected in these other locations.	Noted - please see revised summary of AoS findings in AoS Report.
United Kingdom Without	With respect to the Appraisal of Sustainability (AoS) findings for EN-3, UKWIN would like to express our agreement with the AoS that EfW	Comment noted.

<p>Incineration Network (UKWIN)</p>	<p>(incineration) has a significant negative impact on reducing carbon emissions to Net Zero by 2050 in the short, medium and long-term.</p> <p>However, even with a requirement for carbon capture, allowing new waste incineration capacity would adversely affect Net Zero due to the opportunity costs associated with recycling, waste minimisation, and the circular economy. The adverse climate change impacts of incineration go beyond direct emissions and opportunity costs to include impacts associated with the 'embedded carbon' in the feedstock as well as the environmental cost of replacing products and materials lost through incineration. UKWIN is disappointed that these wider adverse impacts, which would not be addressed through carbon capture, are not adequately recognised within the AoS. For more about the shortcomings of carbon capture when applied to waste incinerators see 'CCS for incinerators? An expensive distraction to a circular economy Report' (Zero Waste Europe, October 2021) [available from: https://zerowasteurope.eu/wp-content/uploads/2021/10/ZWE_Oct2021_CSS_Report.pdf], which concludes that: "...analysis shows that CCS is not a suitable approach to be applied to incinerators, not least because CO2 emissions from municipal waste incinerators are avoidable through the diversion of material away from incineration; and because the benefits of such diversion contrast with the many shortcomings associated with CCS for MWIs. Diverting material from incineration would deliver lower carbon outcomes for much less money, and with much less risk, than through the use of carbon capture technology. CCS for municipal waste incinerators would come with significant opportunity costs, undermining more systemic change to resource and waste management, as well as creating perverse incentives to incinerate material that should otherwise be reduced, reused or recycled. Investing in CCS for incinerators would create an additional barrier to the achievement of a low-carbon circular economy, for example by exacerbating the lock-in effect of incinerators, and would come at the expense of the significant environmental, economic and social benefits that such a transition would deliver".</p>	<p>The Government's view is that waste incineration should not compete with greater waste prevention, re-use or recycling, however, it does play an important role in diverting waste from landfill. As set out in the government response, EN-3 2.17.2 states that an assessment of the proposed waste combustion generating station should be undertaken that examines the conformity of the scheme with the waste hierarchy. We have not revised this further. According to our best estimates, energy from waste (even in electricity-mode only) is a better option for processing municipal waste than landfill in terms of carbon dioxide emissions. If heat from the energy from waste process is utilised, EfW is an even better option.</p> <p>For additional background, in October 2020 as part of the Circular Economy Package we legislated to include a permit condition for landfill and incineration operators meaning they cannot accept separately collected paper, metal, glass or plastic for landfill or incineration unless it has gone through some form of treatment process first and is the best environmental outcome. This is in addition to existing permit measures that already prevent acceptance of recyclable material.</p> <p>Waste policy is devolved and all governments across the UK have policies in place to reduce the</p>
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	<p>It is not acceptable for the AoS to have failed to consider the alternative option of not allowing any new large-scale waste incinerators, given that just such an alternative approach was adopted by the Welsh Government as a key part of their drive towards Net Zero [Source: https://gov.wales/wales-takes-action-circular-economy-funding-upcoming-reforms-plastic-and-moratorium-large-scale]. Given that incinerators rely on burning plastic to generate energy, and given that in such circumstances plastic is used as a fossil fuel, a moratorium on new large-scale incineration capacity would support the realisation of the Government's Energy White Paper which states that: "Our energy system is dominated by the use of fossil fuels and will need to change dramatically by 2050 if we are to achieve net zero emissions...Decarbonising the energy system over the next thirty years means replacing - as far as it is possible to do so - fossil fuels with clean energy technologies such as renewables, nuclear and hydrogen".</p>	<p>amount of waste produced, increase recycling, and reduce the amount of residual waste sent for treatment.</p> <p>Not allowing large scale waste incinerators is not a Policy option within the NPS and as such has not been considered within the AoS.</p>
RSPB	<p>See our comments on the AoS findings for EN-1. The AoS consider that the alternative of only consenting biomass or waste combustion plant with CCS is highly uncertain, but could be a more sustainable alternative. The Government must to rapidly bring forward its requirements for CCR in order to make this a more feasible proposition.</p> <p>We welcome the recognition of the potential for significant transboundary effects, particularly through the development of offshore wind farms, and the need to consult neighbouring EU states as well as Norway, the Isle of Man and the Channel Islands. As noted in our answer to Q23a, the lack of effective spatial planning in the marine environment makes it impossible to properly assess transboundary effects, and leaving this issue to project-level EIA is likely to result in poor environmental outcomes.</p>	<p>Comment noted.</p>

Q23d. Do you have any comments on the AoS findings for the draft NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)?

Organisation	Comment	Response
Historic England	Assessment in the AoS focuses on carbon emissions (methane); biodiversity; landscape and visual; water quality and resources; air quality; soil resources and contamination; and noise and vibration. AoS objective 5 (Protect and enhance cultural heritage assets and their setting, and the wider historic environment) should be referenced in subsequent assessment, as should consideration of impacts on the historic environment.	Comment already addressed (see above)
RSPB	See our comments on the AoS findings for EN-1. The AoS considers that the alternative of only consenting gas infrastructure which can convert to low carbon alternatives in the future may compromise security of supply and affordability. It is assessed as having a large negative effect on security of supply, but a positive effect on net zero and the natural environment. EN-4 is preferred because it is more likely to give confidence to developers to come forward with planning applications which if approved will contribute to security of supply and affordability. This is a good example about how fears about security of supply, which may or may not be justified, trump considerations about environmental impacts, to the extent that a reasonable alternative which would allow a quicker transition to net zero is discounted.	Section 2.5 of EN-1 sets out Government's view on the importance of security of supply and notes, for example, that as global energy costs rise due to demand soaring as the economy reopened after COVID-19 and the Russian invasion of Ukraine, security of supply requires a greater focus on domestic energy production. The AoS reflects the Policy content and approach of the EN's as set out by Government.

Q23e. Do you have any comments on the AoS findings for the draft NPS for Electricity Networks Infrastructure (EN-5)?

Organisation	Comment	Response
Historic England	Assessment in the AoS focuses on reducing carbon to net zero (with regard SF6); biodiversity and geological conservation; landscape and visual; noise and vibration; and health and well being and safety of all citizens (including electro-magnetic fields). AoS objective 5 (Protect and enhance cultural heritage assets and their setting, and the wider historic environment) should be referenced in subsequent assessment, as should consideration of impacts on the historic environment.	This comment has already been addressed above
RSPB	We agree that the undergrounding of all electricity lines may have other impacts, including on sensitive habitats, and is best decided on a case-by-case basis.	Comment noted.

B.3. Responses made via second public consultation on NPSs and AoS (2023)

The following sets out comments received to a series of questions posed during consultation in relation to the AoS and the AoS response. For responses made in respect of the NPS, please see the NPS response document.

Organisation	Comment	Response
Historic England	<p>Question 1 - Do you agree with the glossary definition for CNP?</p> <p>Delivery of energy generation to meet forecast needs and net zero objectives is based on complex factors such as challenges faced by the UK energy market, resources, and grid connection capacity which are important to address alongside policy. For example, in November 2022 the National Grid stated that for those looking for a connection to the electricity transmission system in England and Wales, the queue comprises 176 GW of new generation and interconnector schemes. Monitoring is vital to track progress of delivering 50GW Offshore Wind energy generation, to measures policy outcomes and to review unintended consequences for the Historic Environment where there is the risk of substantial harm or loss of heritage assets. The AOS refers to heritage monitoring indicators: we support their use for monitoring with Historic England referred to as the data source as the reference to Natural England is incorrect.</p>	Heritage monitoring indicators changed to have Historic England as a source of data as originally intended.
	<p>Question 8 - Do you have any comments on any aspect of the draft energy NPSs or their associated documents not covered by the previous questions?</p> <p>Appraisal of Sustainability (AOS)</p> <p>The Energy NPSs refer to the AOS in each policy document, however it is unclear how the AOS has informed the Energy NPS content. While there is a reference to the different assessments (AOS and HRA) that have been done, it would be useful to note the basis for their assessment and how their conclusions have been considered in the NPS. For example, EN-1 paragraph 2.6.3 refers to testing under the AOS but is unclear about the outcomes.</p>	Appendix E of Appraisal of Sustainability – Appendices Supporting Evidence Volume I provides detail of the key recommendations made by the AoS during the process.

<p>In EN-5 the AOS does not consider heritage impact, which is a concerning omission when the scope of CNP infrastructure and potential for undergrounding may lead to very significant impacts on archaeological remains.</p>	<p>The AoS of EN-5 is nested in the AoS of EN-1 and it has been considered that heritage impacts across all ENs are sufficiently addressed through the consenting conditions set out in EN-1 for heritage. The drafting of such conditions in EN-1 were informed by the results of the AoS and it is considered there is no need for duplication of such conditions in EN-5. The potential for application of the concept of CNP to have very significant impacts on cultural heritage has been noted in the AoS.</p>
<p>The AOS also omits heritage as an objective in the appraisal of EN-3. In its evaluation of the CNP policy presumption Historic England notes the Sustainability Appraisal for EN-1 should have included a reasonable alternative that covers a scenario without the new CNP policy presumption. This would have assisted in identifying the extent of potential environmental impacts with and without the policy in place.</p>	<p>The AoS of EN-3 is nested in the AoS of EN-1 and it has been considered that heritage impacts across all ENs are sufficiently addressed through the consenting conditions set out in EN-1 for heritage. The drafting of such conditions in EN-1 were informed by the results of the AoS and it is considered there is no need for duplication of such conditions in EN-3.</p> <p>The AoS that was originally undertaken did not assess CNP as CNP was understood at the time the assessment took place to be an exception</p>

		to the conditions set out in Chapter 4 and 5 on EN-1 and in Chapter 3 of EN-3. The revised AoS now provides an assessment of CNP in Chapter 10 and notes that there is a potential for significant large negative effects on cultural heritage.
	The inclusion of heritage assets in Sustainability Appraisal maps in Annex D would allow for a comprehensive view of assets which may be impacted by Energy NPS proposals. While the main AOS report refers to a comprehensive list of heritage assets, these are not reflected in the supplementary mapping analysis. In addition to showing listed buildings and conservation areas, mapping could also consider heritage at risk and non-designated heritage assets.	<p>Appendix D of Appraisal of Sustainability – Appendices Supporting Evidence Volume I provides baseline information on a variety of heritage assets and this includes reference to Heritage at Risk register.</p> <p>Reference to non-designated heritage assets have been to Appendix D.</p> <p>Issues due to the scale of maps, which cover the whole of the United Kingdom, mean that not all features are displayed.</p>
Natural England	<p>Question 8</p> <p>Natural England welcomes the revised draft statements, and in addition to the points made below, we are also pleased to see:</p> <ul style="list-style-type: none"> • incorporation of many of our comments which didn't make it into the last Draft into the Appraisal of Sustainability (AoS). • reference to early engagement with Natural England (EN-1 4.5.6). 	Comment welcome

Annex – A: Habitats Regulations Assessment Natural England considers that there has been substantial change since the first Habitats Regulations Assessment (HRA) draft was presented to us and that the conclusions drawn require review and amendment. The corrections needed should be reviewed for consistency across the suite of statements.	Issues addressed via comments below.
3.4.1: Purpose and contents of the Energy NPSs Pg 17 states, “This would commit the applicant to determining (whilst seeking the advice of the appropriate SNCB) whether an Appropriate Assessment (AA) is required”. This is incorrect as it is the role of the competent authority to determine whether an Appropriate Assessment is required (informed by the information provided by the applicant) and to carry out that Appropriate Assessment.	HRA text amended to reflect.
Table 3-1: Policy Provisions Protecting International Sites – these may help to produce a robust HRA, but we question whether these would directly help to avoid adverse impacts.	Wording in column header to state ‘Will the provision help to protect the International Sites?’. Associated text also edited.
EN-1 - Evidence Plans are not mandatory and therefore cannot be relied upon. This does not itself avoid impacts.	Addressed by edit to column header (see above). Also added a note to the table text to state that Evidence Plans are not mandatory.
EN-3 states “need to comply with HRA” - compliance will be with the terms and conditions of the permission granted which has been informed by an HRA.	Edit made in HRA to reflect.

EN-3 - Site Integrity Plan for cumulative effects – this term is confusing with the legal ‘site integrity’ test.	EN-3 to be amended to reflect.
<p>3.5: Step 3: Identify the potential effects on the International Site both alone and in combination with other plans or projects</p> <p>We suggest that step 3 is clarified to say, “both alone and, where necessary, in combination with other plans and projects”. Otherwise, this implies that an assessment both alone and in-combination must always be done – which may not be the case - and could lead to onerous and unnecessary work and misapplication of the process. Assumption should be that all aspects of these projects will be Likely Significant Effect (LSE) alone with no need for in combination assessment until project level HRA identifies residual but insignificant effects after applying the Mitigation hierarchy.</p>	Title of Section 3.5 edited.
<p>4. Appropriate Assessment</p> <p>4.4: Summary of Appropriate Assessment</p> <p>We disagree with the conclusion that “there is confidence that the NPSs as a plan, will not result in adverse effects on site integrity of one or more International Sites alone or contribute to in-combination effects”. This also appears to directly contradict the conclusions in Section 7 of this Annex which states “it is not possible to conclude that there will be no effects on International Sites as a result of development coming forward under the NPSs”. In addition, Section 4.3 of this Annex states that “all new energy infrastructure development is likely to require a project-level HRA” which would not be necessary if the NPS Plan has thoroughly assessed everything and reached the above conclusion.</p>	<p>Text in Section 4.3 and 4.4 amended.</p> <p>Section 7 text not amended.</p>
An overall alternative conclusion could be - Due to the limited detail available and to be able to ascertain that the NPS as a plan will not result in adverse effects on site integrity of one or more International Sites, it must be stated that any proposed energy infrastructure development will only be in accordance with this NPS and be authorised if it can be ascertained by its own project level Appropriate Assessment that there would be no adverse effect on the integrity of European Sites either alone or in combination with the likely effects of other plans or projects.	Added to Section 7.

<p>A further addition could be included - If in due course individual energy infrastructure projects, following their Appropriate Assessment and despite mitigation, are likely to have a significant adverse effect on a site's integrity and require a derogation to proceed, they may draw on the case for IROPI (provided it is improved) set out in this NPS.</p>	<p>Added to Section 7.</p>
<p>6. Imperative Reasons of Overriding Public Interest (IROPI) Note that according to Regulation 110 ('national policy statements'), Regulations 107(3 – 6) do not apply i.e., seeking an opinion where Priority SAC features would be affected and notifying Government of a derogation.</p>	<p>Detailed in Section 6.1.1.</p>
<p>Overall, this section fails to apply the 'in principle' tests properly and this undermines the conclusion reached that "the Government is therefore satisfied that there are IROPI in adopting EN-1 to EN-5". There are three aspects of considering grounds for IROPI – (a) that there are reasons of public interest (b) these are urgent and imperative to deliver and (c) the imperative reasons outweigh the harm to the integrity of a site. This section provides no substantive rationale or consideration of the overriding aspect of IROPI, and no testing of the possibility that protecting the integrity of the site might outweigh the benefits of an energy infrastructure proposal. We would signpost the authors to the Government-approved template for a Habitats Regulations assessment: derogation notice - GOV.UK (www.gov.uk) which contains further information about what an IROPI consideration should include.</p>	<p>IROPI text amended to reflect Habitats regulations assessment: derogation notice - GOV.UK (www.gov.uk)</p>

<p>The Wildlife Trusts</p>	<p>Question 1</p> <p>“A policy set out at 2.8.8 to 2.8.13 of EN-3 which applies a policy presumption that, subject to any legal requirements, the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual Impacts not capable of being addressed by application of the Mitigation hierarchy. CNP Infrastructure is defined as nationally significant new Offshore Wind development and supporting onshore and offshore network infrastructure and related network reinforcements.”</p> <p>The glossary definition of CNP infrastructure in its current form will not increase the ability of the UK to reach its net zero ambitions. The Introduction of CNP misaligns energy/net zero and nature recovery targets and places the achievement of Environment Act targets and Good Environmental Status under the UK Marine Strategy at risk.</p> <p>Whilst the Wildlife Trusts support the role of renewable energy to meet net zero, we have serious concerns regarding the Introduction of Critical National priority (CNP) infrastructure. With the watering down of the alternatives test for Habitat Regulations Assessment, there will be further decline to Marine Protected Areas. We have sought legal advice on the change to the alternatives test and have been advised that it is likely to be unlawful (see Appendix B).</p> <p>Furthermore, the overriding nature of CNP infrastructure for residual Impacts for non-HRA sites increase cumulative Impacts and risk further decline in the condition of the wider marine environment. As a knock-on effect, there will be further conflict between environmental stakeholders and developers due to misalignment in energy and nature policy which will further exacerbate the consenting delays and risks which have been experienced over recent years. Policy conflict must be addressed to ensure the delivery of cost-effective approaches to achieve net zero and nature’s recovery.</p> <p>The HRA and Appraisal of Sustainability documents published alongside the draft NPSs fail adequately (or at all) to consider the potential Impacts of the CNP infrastructure proposals on protected sites and on the environment more broadly. This has raised serious concerns, which are detailed in the legal advice we have received (see Appendix B).</p> <p>Finally, we are concerned that there is an absence of limits on the definition of CNP infrastructure provided above (GW or otherwise). While the development of renewable energy is essential to tackle the climate crisis, it is not appropriate to allow infinite space for CNP where multiple uses and nature need to coexist and interact. No evidence has been provided to justify the need for infinite space and how this approach can be justified alongside nature</p>	<p>The AoS and HRA that were originally undertaken did not assess CNP as CNP was understood at the time the assessment took place to be an exception to the conditions set out in the ENs. The revised AoS now provides an assessment of CNP in Chapter 10 and notes that there is a potential for significant large negative effects on the built and natural environment. The revised AoS also considers the implications of CNP in the context of cumulative and transboundary effects. The revised HRA now considers the introduction of CNP.</p>
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	<p>recovery targets. It is not sustainable nor the role of the Energy NPS to prioritise how sea space is used. In addition, CNP cannot be defined without a supporting just transition plan to ensure that other users of the sea can adapt to the prioritisation of Offshore Wind and associated infrastructure alongside the certainty that nature can recover.</p>	
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	<p>Question 2 Do you agree with the new guidance added to draft EN-1, draft EN-3 and draft EN-5 on the CNP for offshore wind, supporting onshore and offshore network infrastructure, and related network reinforcements?</p> <p>No, The Wildlife Trusts do not agree with the new guidance for the following reasons:</p>	
	<p>The Assessment of Sustainability (AoS) and Habitats Regulations Assessment (HRA) has not included any assessment of the impact of CNP. The failure to consider CNP within either of these assessments is concerning, particularly in relation to understanding the cumulative significant Impacts on both individual protected sites and the network as a whole. There is no strategic assessment of the potential impact of that policy, nor will there be any project-level consideration whether development should be directed towards certain areas in order to minimise harm to the integrity of protected sites. We have sought legal advice on this which states that it is not clear how the Secretary of State can discharge duties with regards to the Habitats Regulations or SEA Regulations. This advice is included in Appendix B.</p>	<p>The AoS that was originally undertaken did not assess CNP as CNP was understood at the time the assessment took place to be an exception to the conditions set out in the ENs.</p> <p>The revised AoS now provides an assessment of CNP in Chapter 10 and notes that there is a potential for significant large negative effects on the built and natural environment. The revised AoS also considers the implications of CNP in the context of cumulative and transboundary effects.</p> <p>The revised HRA now considers the introduction of CNP.</p>
	<p>It places legal targets for nature recovery and net zero in conflict. For example, the policy to remove alternative locations as part of the alternatives test for the Habitats Regulations Assessment will further impede the recovery of sites and increase potential for further decline to the MPA network, placing Environment Act targets at risk. We have sought legal advice on the change to the HRA alternative test which suggests this likely to be unlawful. This advice is included in Appendix B.</p>	<p>Comment noted.</p>

	<p>New policy on CNP outweighing residual non-HRA Impacts will not incentivise developers to reduce Impacts in line with the Mitigation hierarchy and will result in increased cumulative impacts. At sea, this will affect the ability to achieve Good Environmental Status under the UK Marine Strategy.</p>	<p>The revised AoS now provides an assessment of CNP in Chapter 10 and notes that there is a potential for significant large negative effects on the built and natural environment. The revised AoS also considers the implications of CNP in the context of cumulative and transboundary effects.</p>
	<p>We are concerned that there is an absence of limits on the definition of CNP infrastructure provided above (GW or otherwise). While the development of renewable energy is essential to tackle the climate crisis, it is not appropriate to allow infinite space for CNP where multiple uses and nature need to coexist and interact. No evidence has been provided to justify the need for infinite space and how this approach can be justified alongside nature recovery targets. It is not sustainable nor the role of the Energy NPS to prioritise how sea space is used. In addition, CNP cannot be defined without a supporting just transition plan to ensure that other users of the sea can adapt to the prioritisation of Offshore Wind and associated infrastructure alongside the certainty that nature can recover.</p>	<p>The revised AoS now provides an assessment of CNP in Chapter 10 and notes that there is a potential for significant large negative effects on the built and natural environment. The revised AoS also considers the implications of CNP in the context of cumulative and transboundary effects.</p>
	<p>It is disappointing that energy and environmental legislation and policy remains in conflict, and potentially more so than when the Energy NPS was consulted upon in 2021 with the Introduction of CNP infrastructure. Therefore, we do not support the Introduction of CNP infrastructure in its current form.</p>	<p>Comment noted.</p>
<p>Natural Resource Wales</p>	<p>Question 8</p> <p>Section 3.11 Tidal Stream Energy, although we welcome consideration of tidal stream, we believe more consideration is required for this section. The tidal stream section only includes a very cursory consideration of potential impacts. We recognise the evidence about Impacts is less well developed, but it is important that the potential effects are comprehensively described and reliance on the Offshore Wind Assessment information is insufficient. Furthermore, the section should acknowledge that much of the evidence about Impacts is derived from</p>	<p>Tidal Stream Energy is noted within EN-3 and the AoS considers this within Chapter 7.</p>

	consideration of projects comprising a small number of devices. The effects of arrays that would qualify as an NSIP are likely to be different or amplified and extrapolation should be approached with caution. We have made comments on the specific tidal stream sections below but suggest that this section is reviewed to consider the points made.	
	There are early-stage proposals for a number of tidal range projects in Wales and the technology is supported by Welsh Government through its Programme for Government and the development of a Tidal lagoon Challenge. Some of the implications of Tidal Range development will be unique to that sector and the need for a section in EN-3 to cover the technology, informed by Habitats Regulations Assessment and Appraisal of Sustainability, should also be included in the longer term.	Tidal Stream Energy is noted within EN-3 and the AoS considers this within Chapter 7.
Essex Suffolk Pylons	Question 7 - Draft EN-5 includes a strong starting presumption for overhead lines for electricity networks developments outside nationally designated landscapes, which was consulted on in 2021.	
	No. The presumption in favour of overhead cables will create the worst outcomes and is not necessary to deliver the Government's objectives in relation to Offshore Wind– there are obvious alternatives as they implicitly accept by indicating that they would not be appropriate in nationally designated landscapes. So why not just allow a presumption-free consideration of the pros and cons in the circumstances of any given case? In addition, a presumption in favour of OHL is incompatible with, and contradictory, to other policies and legal requirements for the construction of transmission infrastructure. Electricity Act 1989 duties on National Grid include: Section 38 and Schedule 9 – duty to have regard to the desirability of ... conserving flora, fauna, geological or geophysical features of special interest, and or protecting buildings and objects of architectural, historic or archaeological interest. Preservation of ecological resources (Schedule 9); Shall do what he reasonably can to mitigate any effect on ...any such flora, fauna, features, sites, buildings or objects. National Policy Statement EN-1, paragraph 3.7.10: "...in most cases, there will be more than one technological approach by which it is possible to make such a connection or reinforce the network (for example, by overhead line or underground cable) and the costs and benefits of these alternatives should be properly considered as set out in EN-5 before any overhead line proposal is consented." Evidence: already National Grid claims (wrongly) that National Policy Statements oblige it to build pylons across East Anglia, when that is not what the current wording of the NPS's implies. This means that instead of looking at all the possible options and taking a WHOLE GRID approach	<p>Comments noted – the anticipated effect of overhead cables are addressed in the AoS. This includes note of the potential for significant and ongoing negative effects on landscape and townscape / visual amenity across the short, medium and long term.</p> <p>The AoS also notes that underground lines are not without a range of adverse impacts of their own, and given that they are significantly more expensive, it is considered better to adopt the policies set out in EN-1 and EN-5. This is because the range of factors to</p>

	<p>to costing, NG has falsely used the published NPS's to justify a bad project. This will be even worse if a presumption in favour of OHL's is applied. ALL OPTIONS MUST ALWAYS BE CONSIDERED, USING TREASURY GREEN BOOK GUIDELINES.</p>	<p>be taken into account means that any decision to underground is best taken within a more flexible policy framework that follows a case by case evaluation of all of the impacts of a particular project and supports the use of both undergrounding and overhead lines as appropriate. The AoS refers to the usefulness of application of Government's Treasury Green Book guidance in NSIP strategic options appraisal process.</p>
	<p>Further, the wording of paragraph 2.11.13 is incompatible with the aims of the NSIPs action plan, because it will not deliver better, faster, fairer, greener and more resilient infrastructure. OHL's are highly damaging to habitats and bird strikes into power lines are a major killer acknowledged in the NPS's. Forcing pylons upon communities without genuine alternatives is not fair. OHL's are less resilient in extreme weather than underground cables or sub-sea grids. And a contentious system in which communities are not presented with options will be slower than a fair system with fully evidenced alternatives. A presumption in favour of OHL is outdated, and not fit for a world in which by 2050, according to National Grid ESO in 2020[2], the UK will need to have a total of 83 Gigawatts (GW) of Offshore Wind power connected to the grid. National Grid ESO said, of this growth, "One of the challenges to delivering the ambition in the timescales required will be ensuring that the offshore and onshore transmission network enables this growth in a way that is efficient for consumers and takes account of the Impacts on coastal communities and the environment." It is self-evident that if the power is being generated offshore, a presumption in favour of OHL to transmit it may be the wrong starting point!</p>	<p>Comment noted – anticipated effects of overhead and underground lines have been addressed in the AoS.</p>

	<p>Further, the AoS that accompanies this consultation notes the problems associated with OHLs, admitting that underground lines present less of an issue - thus making it indefensible to include a presumption in favour of the most damaging option: "New overhead transmission lines can give rise to adverse landscape, townscape and visual impacts. These Impacts depend on the type (for example, whether lines are supported by towers or monopole structures), scale, siting, and degree of screening of the lines, as well as the characteristics of the landscape and local environment through which they are routed. Underground transmission lines present less of an issue in this respect, apart from during construction." "The development of overhead transmission lines ... add an industrial element and impact natural landscapes." "Cumulative adverse Impacts may arise where new overhead lines are required along with other related developments such as substations, wind farms, and/or other new sources of generation."</p>	<p>Comment noted – anticipated effects of overhead and underground lines have been addressed in the AoS.</p>
	<p>We believe that to ensure better, faster, fairer, greener and more resilient transmission infrastructure, which is the goal of the NSIP's Action Plan, paragraph 2.11.13 of Draft EN-5 should be changed to read: 'a full range of options must be considered and presented to stakeholders, taking Treasury Green Book[3] principles into account, so that the optimum solution for consumers, communities and the environment is arrived at'. All NPS's should insist upon compliance with Treasury Green Book guidance.</p>	<p>Comment noted – the AoS refers to the usefulness of application of Government's Treasury Green Book guidance in NSIP strategic options appraisal process.</p>

Appendix C. Review of Policies, Plans and Programmes

Note: The following review of Plans, Policy and Legislation has been updated to reflect comments made to the Scoping Report consultation. However, it is not to be considered an exhaustive list and elements may have been superseded. However, it is the purpose to demonstrate the context of the NPS and associated AoS and to show how these are broadly influenced in setting Objectives for both.

Table 1 – Key Plans, Policies and Legislation - International

Plan, Policy or Legislation	Key Objectives / Targets / Guidance	Implications for the AoS
Convention on Biological Diversity 2010	Sets out a conservation plan to protect global biodiversity, and an international treaty to establish a fair and equitable system to enable nations to co-operate in accessing and sharing the benefits of genetic resources. The new global vision is “By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential to all people”.	Ensure protection of biodiversity objective within AoS framework.
Kumming-Montreal Global Biodiversity Framework 2023	<p>The Kunming-Montreal Global Biodiversity Framework, building on the Strategic Plan for Biodiversity 2011–2020, its achievements, gaps, and lessons learned, and the experience and achievements of other relevant multilateral environmental agreements, sets out an ambitious plan to implement broad-based action to bring about a transformation in our societies’ relationship with biodiversity by 2030, in line with the 2030 Agenda for Sustainable Development and its Sustainable Development Goals, and ensure that, by 2050, the shared vision of living in harmony with nature is fulfilled.</p> <p>The vision of the Framework is a world of living in harmony with nature where “by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.”</p>	Ensure AoS framework taken account of goals and targets set out in this framework.

The mission of the Framework for the period up to 2030, towards the 2050 vision is: To take urgent action to halt and reverse biodiversity loss to put nature on a path to recovery for the benefit of people and planet by conserving and sustainably using biodiversity and by ensuring the fair and equitable sharing of benefits from the use of genetic resources, while providing the necessary means of implementation.

The Framework has four long-term goals for 2050 related to the 2050 Vision for biodiversity.

GOAL A: The integrity, connectivity and resilience of all ecosystems are maintained, enhanced, or restored, substantially increasing the area of natural ecosystems by 2050; human induced extinction of known threatened species is halted, and, by 2050, the extinction rate and risk of all species are reduced tenfold and the abundance of native wild species is increased to healthy and resilient levels; and the genetic diversity within populations of wild and domesticated species, is maintained, safeguarding their adaptive potential.

GOAL B: Biodiversity is sustainably used and managed and nature's contributions to people, including ecosystem functions and services, are valued, maintained and enhanced, with those currently in decline being restored, supporting the achievement of sustainable development for the benefit of present and future generations by 2050.

GOAL C: The monetary and non-monetary benefits from the utilization of genetic resources and digital sequence information on genetic resources, and of traditional knowledge associated with genetic resources, as applicable, are shared fairly and equitably, including, as appropriate with indigenous peoples and local

	<p>communities, and substantially increased by 2050, while ensuring traditional knowledge associated with genetic resources is appropriately protected, thereby contributing to the conservation and sustainable use of biodiversity, in accordance with internationally agreed access and benefit-sharing instruments.</p> <p>GOAL D: Adequate means of implementation, including financial resources, capacity-building, technical and scientific cooperation, and access to and transfer of technology to fully implement the Kunming-Montreal Global Biodiversity Framework are secured and equitably accessible to all Parties, especially developing country Parties, in particular the least developed countries and small island developing States, as well as countries with economies in transition, progressively closing the biodiversity finance gap of \$700 billion per year, and aligning financial flows with the Kunming-Montreal Global Biodiversity Framework and the 2050 Vision for biodiversity.</p> <p>The Framework has 23 action-oriented global targets for urgent action over the decade to 2030. The actions set out in each target need to be initiated immediately and completed by 2030. Together, the results will enable achievement towards the outcome-oriented goals for 2050. Actions to reach these targets should be implemented consistently and in harmony with the Convention on Biological Diversity and its Protocols, and other relevant international obligations, taking into account national circumstances, priorities and socioeconomic conditions.</p> <p>1. Reducing threats to biodiversity</p> <p>TARGET 1: Ensure that all areas are under participatory, integrated and biodiversity inclusive spatial planning and/or effective management processes</p>	
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addressing land- and sea-use change, to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, while respecting the rights of indigenous peoples and local communities.

TARGET 2: Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial, inland water, and marine and coastal ecosystems are under effective restoration, in order to enhance biodiversity and ecosystem functions and services, ecological integrity and connectivity.

TARGET 3: Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.

TARGET 4: Ensure urgent management actions to halt human induced extinction of known threatened species and for the recovery and conservation of species, in particular threatened species, to significantly reduce extinction risk, as well as to maintain and restore the genetic diversity within and between populations of native, wild and domesticated species to maintain their adaptive potential, including through in situ and ex situ conservation and sustainable management

practices, and effectively manage human-wildlife interactions to minimize human-wildlife conflict for coexistence.

TARGET 5: Ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation, minimizing impacts on non-target species and ecosystems, and reducing the risk of pathogen spillover, applying the ecosystem approach, while respecting and protecting customary sustainable use by indigenous peoples and local communities.

TARGET 6: Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by identifying and managing pathways of the introduction of alien species, preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 per cent by 2030, and eradicating or controlling invasive alien species, especially in priority sites, such as islands.

TARGET 7: Reduce pollution risks and the negative impact of pollution from all sources by 2030, to levels that are not harmful to biodiversity and ecosystem functions and services, considering cumulative effects, including: (a) by reducing excess nutrients lost to the environment by at least half, including through more efficient nutrient cycling and use; (b) by reducing the overall risk from pesticides and highly hazardous chemicals by at least half, including through integrated pest management, based on science, taking into account food security and livelihoods; and (c) by preventing, reducing, and working towards eliminating plastic pollution.

TARGET 8: Minimize the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation, and disaster

	<p>risk reduction actions, including through nature-based solutions and/or ecosystem-based approaches, while minimizing negative and fostering positive impacts of climate action on biodiversity.</p> <p>2. Meeting people's needs through sustainable use and benefit-sharing</p> <p>TARGET 9: Ensure that the management and use of wild species are sustainable, thereby providing social, economic and environmental benefits for people, especially those in vulnerable situations and those most dependent on biodiversity, including through sustainable biodiversity-based activities, products and services that enhance biodiversity, and protecting and encouraging customary sustainable use by indigenous peoples and local communities.</p> <p>TARGET 10: Ensure that areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices, such as sustainable intensification, agroecological and other innovative approaches, contributing to the resilience and long-term efficiency and productivity of these production systems, and to food security, conserving and restoring biodiversity and maintaining nature's contributions to people, including ecosystem functions and services.</p> <p>TARGET 11: Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services, such as the regulation of air, water and climate, soil health, pollination and reduction of disease risk, as well as protection from natural hazards and disasters, through nature-based solutions and/or ecosystem-based approaches for the benefit of all people and nature.</p>	
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	<p>TARGET 12: Significantly increase the area and quality, and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas sustainably, by mainstreaming the conservation and sustainable use of biodiversity, and ensure biodiversity-inclusive urban planning, enhancing native biodiversity, ecological connectivity and integrity, and improving human health and well-being and connection to nature, and contributing to inclusive and sustainable urbanization and to the provision of ecosystem functions and services.</p> <p>TARGET 13: Take effective legal, policy, administrative and capacity-building measures at all levels, as appropriate, to ensure the fair and equitable sharing of benefits that arise from the utilization of genetic resources and from digital sequence information on genetic resources, as well as traditional knowledge associated with genetic resources, and facilitating appropriate access to genetic resources, and by 2030, facilitating a significant increase of the benefits shared, in accordance with applicable international access and benefit-sharing instruments.</p> <p>3. Tools and solutions for implementation and mainstreaming</p> <p>TARGET 14: Ensure the full integration of biodiversity and its multiple values into policies, regulations, planning and development processes, poverty eradication strategies, strategic environmental assessments, environmental impact assessments and, as appropriate, national accounting, within and across all levels of government and across all sectors, in particular those with significant impacts on biodiversity, progressively aligning all relevant public and private activities, and fiscal and financial flows with the goals and targets of this framework.</p>	
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	<p>TARGET 15: Take legal, administrative or policy measures to encourage and enable business, and in particular to ensure that large and transnational companies and financial institutions:</p> <p>(a) Regularly monitor, assess, and transparently disclose their risks, dependencies and impacts on biodiversity, including with requirements for all large as well as transnational companies and financial institutions along their operations, supply and value chains, and portfolios;</p> <p>(b) Provide information needed to consumers to promote sustainable consumption patterns;</p> <p>(c) Report on compliance with access and benefit-sharing regulations and measures, as applicable;</p> <p>in order to progressively reduce negative impacts on biodiversity, increase positive impacts, reduce biodiversity-related risks to business and financial institutions, and promote actions to ensure sustainable patterns of production.</p> <p>TARGET 16: Ensure that people are encouraged and enabled to make sustainable consumption choices, including by establishing supportive policy, legislative or regulatory frameworks, improving education and access to relevant and accurate information and alternatives, and by 2030, reduce the global footprint of consumption in an equitable manner, including through halving global food waste, significantly reducing overconsumption and substantially reducing waste generation, in order for all people to live well in harmony with Mother Earth.</p>	
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	<p>TARGET 17: Establish, strengthen capacity for, and implement in all countries, biosafety measures as set out in Article 8(g) of the Convention on Biological Diversity and measures for the handling of biotechnology and distribution of its benefits as set out in Article 19 of the Convention.</p> <p>TARGET 18: Identify by 2025, and eliminate, phase out or reform incentives, including subsidies, harmful for biodiversity, in a proportionate, just, fair, effective and equitable way, while substantially and progressively reducing them by at least \$500 billion per year by 2030, starting with the most harmful incentives, and scale up positive incentives for the conservation and sustainable use of biodiversity.</p> <p>TARGET 19: Substantially and progressively increase the level of financial resources from all sources, in an effective, timely and easily accessible manner, including domestic, international, public and private resources, in accordance with Article 20 of the Convention, to implement national biodiversity strategies and action plans, mobilizing at least \$200 billion per year by 2030, including by:</p> <p>(a) Increasing total biodiversity related international financial resources from developed countries, including official development assistance, and from countries that voluntarily assume obligations of developed country Parties, to developing countries, in particular the least developed countries and small island developing States, as well as countries with economies in transition, to at least \$20 billion per year by 2025, and to at least \$30 billion per year by 2030;</p> <p>(b) Significantly increasing domestic resource mobilization, facilitated by the preparation and implementation of national biodiversity finance plans or similar instruments according to national needs, priorities and circumstances;</p>	
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	<p>(c) Leveraging private finance, promoting blended finance, implementing strategies for raising new and additional resources, and encouraging the private sector to invest in biodiversity, including through impact funds and other instruments;</p> <p>(d) Stimulating innovative schemes such as payment for ecosystem services, green bonds, biodiversity offsets and credits, and benefit-sharing mechanisms, with environmental and social safeguards;</p> <p>(e) Optimizing co-benefits and synergies of finance targeting the biodiversity and climate crises;</p> <p>(f) Enhancing the role of collective actions, including by indigenous peoples and local communities, Mother Earth centric actions[1] and non-market-based approaches including community based natural resource management and civil society cooperation and solidarity aimed at the conservation of biodiversity;</p> <p>(g) Enhancing the effectiveness, efficiency and transparency of resource provision and use;</p> <p>TARGET 20: Strengthen capacity-building and development, access to and transfer of technology, and promote development of and access to innovation and technical and scientific cooperation, including through South-South, North-South and triangular cooperation, to meet the needs for effective implementation, particularly in developing countries, fostering joint technology development and joint scientific research programmes for the conservation and sustainable use of biodiversity and strengthening scientific research and monitoring capacities, commensurate with the ambition of the goals and targets of the Framework.</p>	
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TARGET 21: Ensure that the best available data, information and knowledge are accessible to decision makers, practitioners and the public to guide effective and equitable governance, integrated and participatory management of biodiversity, and to strengthen communication, awareness-raising, education, monitoring, research and knowledge management and, also in this context, traditional knowledge, innovations, practices and technologies of indigenous peoples and local communities should only be accessed with their free, prior and informed consent,[2] in accordance with national legislation.

TARGET 22:

Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making, and access to justice and information related to biodiversity by indigenous peoples and local communities, respecting their cultures and their rights over lands, territories, resources, and traditional knowledge, as well as by women and girls, children and youth, and persons with disabilities and ensure the full protection of environmental human rights defenders.

TARGET 23: Ensure gender equality in the implementation of the Framework through a gender-responsive approach, where all women and girls have equal opportunity and capacity to contribute to the three objectives of the Convention, including by recognizing their equal rights and access to land and natural resources and their full, equitable, meaningful and informed participation and leadership at all levels of action, engagement, policy and decision-making related to biodiversity.

Berne Convention	The principal aims of the Convention are to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix 3. To this end the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1000 wild animal species.	Ensure protection of biodiversity objective within AoS framework.
Ramsar Convention	The Convention covers all aspects of wetland conservation and wise use. The Convention has three main 'pillars' of activity: the designation of wetlands of international importance as Ramsar sites; the promotion of the wise-use of all wetlands in the territory of each country; and international co-operation with other countries to further the wise-use of wetlands and their resources	Ensure protection of biodiversity objective within AoS framework. HRA Screening will assess whether full Appropriate Assessment is necessary.
UN Framework Convention on Climate Change, Kyoto Protocol, Paris Agreement etc.	A series of international agreements setting targets and legally binding agreements for industrialised countries to cut their greenhouse gas emissions.	Ensure reduction of greenhouse gas emissions objective within the AoS framework. Note is also made of the UK Nationally Determined Contribution that commits to reducing greenhouse gases by 68% by 2030 compared to 1990 levels
UK-EU TAC Agreement, Articles:	Following the UK's departure from the EU, the UK is released from the EU Renewable Energy Directive 2009 (2009/28/EC) and EU Energy Efficiency	Ensure an objective considering alternative /

<p>ENER.21 Renewable Energy and Energy Efficiency, ENER.22 Support for Renewable Energy, ENER.23 Cooperation in the Development of Offshore Renewable Energy, and ENER.26 Research, Development and Innovation.</p>	<p>Directive (2012/27/EU). The Trade and Cooperation (TAC) reaffirms a number of the UK and EU targets and ambitions relating to renewable energy. The TAC sets out the following:</p> <ul style="list-style-type: none"> • The Parties shall promote energy efficiency and the use of the energy from renewable sources; • The UK reaffirms its 2030 ambitions regarding renewables and energy consumption as set out in its National Energy and Climate Plan; • The Parties shall ensure support for integration of electricity from renewable sources in the electricity market; • The Parties shall cooperate in the development of offshore renewable energy; and • The Parties shall promote research, development and innovation in the areas of energy efficiency and renewable energy. 	<p>renewable technologies for energy production is included within the AoS framework.</p> <p>Ensure an objective relating to the prudent use of natural resources (including energy) is included within the AoS framework.</p>
<p>World Heritage Convention 1972</p>	<p>This convention noted that the cultural heritage and the natural heritage are increasingly threatened with destruction not only by the traditional causes of decay, but also by changing social and economic conditions which aggravate the situation with even more formidable phenomena of damage or destruction, and considered that deterioration or disappearance of any item of the cultural or natural heritage constitutes a harmful impoverishment of the heritage of all the nations of the world.</p>	<p>Ensure protection of historic environment objective within AoS framework.</p>
<p>Convention on the Protection of</p>	<p>The UNESCO Convention on the Protection of the Underwater Cultural Heritage, adopted in 2001, is intended to enable States to better protect their submerged cultural heritage.</p>	<p>Ensure historic environment objective within AoS framework.</p>

Underwater Cultural Heritage (2001)	<p>The Convention;</p> <ul style="list-style-type: none"> • sets out basic principles for the protection of underwater cultural heritage; • provides a detailed State cooperation system; and • provides widely recognized practical rules for the treatment and research of underwater cultural heritage. 	
Convention on the Protection of the Archaeological Heritage (1992) – the ‘Valetta Convention’.	<p>The European Convention for the Protection of the Archaeological Heritage (revised) replaced and updated the original London Convention of 1969. It reflected the change in the nature of threats to the archaeological heritage. It established a body of new basic legal standards for Europe, to be met by national policies for the protection of archaeological assets as sources of scientific and documentary evidence, in line with the principles of integrated conservation. It makes the conservation and enhancement of the archaeological heritage one of the goals of urban and regional planning policies. It is concerned in particular with arrangements to be made for co-operation among archaeologists and town and regional planners in order to ensure optimum conservation of archaeological heritage.</p>	Ensure historic environment objective within AoS framework.
European Landscape Convention (2000) – the ‘Florence Convention’	<p>The European Landscape Convention is part of the Council of Europe's work on natural and cultural heritage, spatial planning and the environment.</p> <p>The convention states that:</p> <ul style="list-style-type: none"> • the landscape contributes to the formation of local cultures and that it is a basic component of the European natural and cultural heritage, contributing to human well-being and consolidation of the European identity • that developments in agriculture, forestry, industrial and mineral production techniques and in regional planning, town planning, transport, infrastructure, 	Ensure protection and enhancement of landscapes is considered as an Objective within the AoS.

	<p>tourism and recreation and, at a more general level, changes in the world economy are in many cases accelerating the transformation of landscapes.</p> <p>The aims of this Convention are to promote landscape protection, management and planning, and to organise European co-operation on landscape issues.</p>	
Aarhus Convention 2001	<p>The Aarhus Convention is a multilateral environmental agreement through which the opportunities for citizens to access environmental information are increased and transparent and reliable regulation procedure is secured. It encourages access to information, public participation and access to justice.</p>	<p>The AoS will be consulted upon and open to scrutiny as per the requirement of the relevant regulations.</p>
WHO Guidelines for Community Noise 1999	<p>The World Health Organisation (WHO) publication entitled 'Guidelines for Community Noise' (1999), provides guidance with regard to recommended internal and external noise levels for various building uses, outlining the potential health impacts associated with noise. Specifically, the document recommends internal and external noise levels that would provide an acoustic environment that is conducive to uninterrupted speech and sleep.</p>	<p>Ensure that the health and well-being of people is addressed through an objective in the AoS framework and that noise issues are considered.</p>
WHO Night Noise Guidelines for Europe 2009	<p>The World Health Organisation (WHO) Night Noise Guidelines for Europe (NNG) 2009 are health-based guidelines and are to be considered an extension and update to the WHO Guidelines for Community Noise 1999.</p> <p>WHO NNG provides evidence based policy advice to member states in the development of future legislation and policy action in the area of control and surveillance of night noise exposure.</p>	<p>Ensure that the health and well-being of people is addressed through an objective in the AoS framework and that noise issues are considered.</p>
Espoo Convention on Environmental	<p>The Convention was adopted in 1991 and entered into force in September 2007. The Convention and Protocol lie in an area of mixed competence (environment).</p>	<p>An AoS is being undertaken in accordance with the SEA</p>

<p>Impact Assessment in a Transboundary Context (1991)</p>	<p>The UK and the EU are parties to the Convention. The EU has implemented the EIA Directive that has been transposed into UK domestic law.</p> <p>The Convention sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligations of Parties to consult each other on all major projects under consideration that are likely to have significant transboundary effects. A revision to the Convention in 2004 indicated that affected Parties should be allowed to participate in scoping as appropriate.</p> <p>The Protocol on SEA (Kiev, 2003) augments the Espoo Convention and requires Parties to assess the environmental effects of their plans and programmes. The protocol also proposes extensive public participation in Government decision-making. The UK has signed but not ratified the Protocol. The EU has ratified, and implements through the SEA Directive, transposed in UK domestic law</p>	<p>Regulations that will determine the significant effects of the new NPS and the integral SSA.</p> <p>As a matter of course, Espoo Parties will be engaged as part of the new NPS and AoS consultation process. Transboundary Consultation under the Espoo convention will also be undertaken if it is concluded that proposed activities are likely to cause a significant adverse impact in the environment in another State of the European Economic Area.</p>
<p>Closing the Gap: Social Determinants of Health (World Health Organisation, 2008)</p>	<p>This report aims to:</p> <ul style="list-style-type: none"> • Improve daily living conditions. • Tackle inequitable distribution of power, money and resources. • Measure and understand the problem and assess the impact on action. <p>Recommendations are made to tackle inequalities. A review is currently being undertaken to see how the report relates to England and what practical steps can be taken, to be published in late 2009</p>	<p>New energy infrastructure has the potential to impact living conditions and human health. It is important that sites do not impact disproportionately on vulnerable members of society. The AoS should</p>

		consider the improvement of health equity.
The OSPAR Convention	<p>The Convention for the Protection of the Marine Environment of the North-East Atlantic is the current legislative instrument regulating international cooperation on environmental protection in the North-East Atlantic. This specifically addresses:</p> <ul style="list-style-type: none"> • Prevention and elimination of pollution from land-based sources; • Prevention and elimination of pollution by dumping or incineration; • Prevention and elimination of pollution from offshore sources; • Assessment of the quality of the marine environment; • On the protection and conservation of the ecosystems and biological diversity of the maritime area. 	<p>The AoS should consider objectives that promote the protection and enhancement of the water environment. Such development has the potential to adversely affect the marine environment during construction, operation and decommissioning phases.</p>

Table 2 - Key Plans, Policies and Legislation – National (United Kingdom)

Plan, Policy or Legislation	Key Objectives / Targets / Guidance	Implications for the AoS
DfT Single Departmental Plan 2019	<p>The Department for Transport (DfT) Single Departmental Plan provides a summary of the DfT's objectives and its plans to achieve them. The plan provides objectives split by topic, each subdivided into specific goals, with multiple initiatives or policy statements for each providing evidence of how the DfT expects the goals to be achieved. It is expected that the plan will be updated in the near future to cover the period beyond 2020.</p> <p>Due to the nature of the document, there are too many objectives and targets to list, however, the six primary topics are:</p> <ul style="list-style-type: none"> • supporting the creation of a stronger, cleaner, more productive economy; • helping to connect people and places, balancing investment across the country; • making journeys easier, modern, and reliable; • making sure transport is safe, secure, and sustainable; • preparing the transport system for technological progress and a prosperous future outside the EU; and • promoting a culture of efficiency and productivity in everything we do. <p>Many of the sub-categories include specific, measurable targets, or track progress towards another, more generic target. As such the plan can either be viewed as a directional statement on creating safe, secure, efficient, and reliable transport systems, or even as an action plan.</p>	Note made of primary topic to make transport safe, secure and sustainable

Wildlife and Countryside Act (1981)	The Act [inter alia] prohibits certain methods of killing or taking wild animals; amends the law relating to protection of certain mammals; restricts the introduction of certain animals and plants; amends the Endangered Species (Import and Export) Act 1976; amends the law relating to nature conservation, the countryside and National Parks; and amends the law relating to public rights of way.	Ensure biodiversity and accesses to services are covered by objectives within AoS framework.
Countryside and Rights of Way Act 2000 (CROW Act)	<p>This Act contains five Parts and 16 Schedules and provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB).</p> <p>The Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures.</p>	Ensure that the issue of access to the countryside and protection of landscapes is considered as part of the AoS.
Conservation of Habitats and Species Regulations 2010 as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019	<p>This act consolidates all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.</p> <p>Under the Regulations, competent authorities i.e. any Minister, government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the EC Habitats Directive.</p>	Ensure protection of Natura 2000 sites and consider these through HRA.

Environmental Protection Act (1990)	<p>This act brings in a system of integrated pollution control for the disposal of wastes to land, water and air. There are three parts of the Act. These are:</p> <ul style="list-style-type: none"> • Part I- establishes integrated pollution control and gives Local Authorities new powers to control air pollution from a range of prescribed processes; • Part II- improves the rules on waste disposal; and • Part III- covers statutory nuisances and clean air. 	Ensure that pollution to air and water is prevented or minimised.
National Parks and Access to Countryside Act 2006	<p>The Act established powers to declare National Nature Reserves (NNRs); to notify sites of Sites of Special Scientific Interest (SSSI's) and for local authorities to establish Local Nature Reserves (LNRs).</p> <p>These provisions were strengthened by the Wildlife & Countryside Act 1981. An NNR is an area which is among the best examples of a particular habitat. NNRs are of national importance. They are in many cases owned and managed by the statutory authority, (for example English Nature), but not always. An NNR, unlike an SSSI, has to be managed appropriately to retain its special status.</p>	Ensure protection of sites designated for nature conservation at the national and local level are protected.
Natural Environment and Rural Communities Act 2006	<p>Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.</p> <p>The aim of the biodiversity duty is to raise the profile of biodiversity in England and Wales, so that the conservation of biodiversity becomes properly embedded in all relevant policies and decisions made by public authorities.</p>	Ensure biodiversity objective within AoS framework.
Guidance for Local Authorities on Implementing the	The guidance is intended to assist local authorities in meeting the Biodiversity Duty. The conservation of biodiversity is highly dependent on the extent to which it	Ensure biodiversity objective within the AoS framework.

Biodiversity Duty (2007)	<p>is addressed in infrastructure and development projects and how well the planning process integrates biodiversity into planning and development control policies.</p> <p>Core Strategies and Local Development Plan Strategies set out the overarching policy framework for the plan area. Strategic objectives and policies should be developed for biodiversity, including objectives for enhancement. Consideration should also be given to how biodiversity enhancement can be used to bring about more sustainable development, through integration with other policy objectives and other land uses, for example housing and economic development, health, education and social inclusion.</p>	
UK Biodiversity Plan (1994)	<p>This document represents the first United Kingdom biodiversity action plan. It contains three sections;</p> <ul style="list-style-type: none"> • Section 1 – describes the UK's biological resources and their global importance as well as the range of biodiversity within the UK from a historical and geological importance • Section 2- describes the UK's strategy and programmes and examines threats, problems and opportunities of biodiversity. • Section 3- draws the components of the action plan together and provides a forward work programme. 	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.
UK Post-2010 Biodiversity Framework (2012)	<p>This is a Framework that covers the period from 2011 to 2020, and was developed in response to two main drivers: the Convention on Biological Diversity's (CBD's) Strategic Plan for Biodiversity 2011-2020 and its 5 strategic goals and 20 'Aichi Biodiversity Targets', published in October 2010; and the EU Biodiversity Strategy (EUBS), released in May 2011.</p> <p>The Framework shows how the work of the four UK countries joins up with work at a UK level to achieve the 'Aichi Biodiversity Targets' and the aims of the EU</p>	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.

	<p>biodiversity strategy. It identifies the activities required to complement the country biodiversity strategies, and where work in the country strategies contributes to international obligations. In total, 23 areas of work have been identified where all the countries have agreed that they want to contribute to, and benefit from, a continued UK focus, and an Implementation Plan was published in November 2013.</p>	
<p>UK Sustainable Development Strategy 2005</p>	<p>This strategy has four broad objectives:</p> <ul style="list-style-type: none"> • Sustainable consumption and production – working towards achieving more with less. • Natural resource protection and environmental enhancement • From local to global, building sustainable communities • Climate change and energy <p>Our landscapes and seascapes are inseparable from our culture, bearing the imprints of generations of land use. Our physical and mental health is reliant on the quality of the environment. There must also be access to a variety of well-managed and maintained green spaces for leisure, sport, recreation and general public benefit to help people choose healthy lifestyles, in urban as well as rural areas.</p>	<p>Ensure the AoS considers the full range of sustainability issues.</p>
<p>UK Shared Framework for Sustainable Development; One Future – Different Paths 2005</p>	<p>This framework document sets out the common goals and challenges of the UK Government and devolved administrations of Scotland, Wales and Northern Ireland. Each devolved administration will have its own strategy document but the framework demonstrates the commitment to work together on shared goals and challenges This framework document sets out what those are, and is an</p>	<p>Ensure the AoS considers the full range of sustainability issues.</p>

	affirmation that the whole of the UK will work to common goals without compromising the strengths which our diversity of approach offers.	
National Infrastructure Plan (2014)	<p>The National Infrastructure Plan (NIP) 2014 presents an overview of the government's policies, investments and record on infrastructure delivery since 2010. The document identifies that over 2,500 different projects or schemes have been delivered in this Parliament. It also details the government's approach to ensuring that the Top 40 priority investments remain on track to deliver, as well as providing the latest detail on the timing, funding and status of each of them.</p> <p>The plan consolidates and builds on the progress already made by providing the clarity and visibility that industry, the supply chain and investors need going forwards. In addition to the pipeline, the document provides information on the government's ongoing work to improve the planning, performance and delivery of infrastructure and addresses longer term challenges, for example by incorporating analysis of the financing requirements for our infrastructure.</p>	AoS needs to consider potential for cumulative effects with other developments.
Towards Social Investment for Growth and Cohesion 2014 - 2020	This document, alongside a series of Staff Working Documents, form the Social Investment Package. This outlines a policy framework for redirecting Member States policies where needed towards social investment throughout life, with a view to ensuring the adequate and sustainability of budgets for social policies and for the government and private sector as a whole.	No implications. Informative only.
Health Impact Assessment in Strategic	This is a review of Health Impact Assessment concepts, methods and practices to support the development of a protocol on Strategic Environmental Assessment which adequately covers health impacts. It discusses how decisions taken outside of the health sector can affect the health of individuals and populations by	AoS needs to consider health impacts and needs to note all elements of this document.

Environmental Assessment (2001)	<p>modifying their physical and social environment, and how this in turn affects social and economic development.</p> <p>It describes methods, procedures and practices to carry out health impact assessments of policies, plans and projects, highlighting the similarities with and opportunities for integrating health impact assessment within strategic environmental assessments, and other forms of impact assessment under use.</p> <p>It also draws attention to the opportunities for achieving health benefits and avoiding health costs by considering health impacts early in the planning process. It is aimed at inspiring policy makers to include health considerations early in their planning process by showing how different perspectives can feasibly be incorporated into everyday decisions.</p>	
Children's Environment and Health Action Plan – Summary of current activities which address children's environment and health issues in the UK (2007)	<p>This report summarises current initiatives which address children and young people's environment and health issues in the UK. The main findings of the report are that the UK has long recognized both the importance of, and the health benefits gained from, a clean and healthy environment. A range of initiatives have already led to a significant reduction in child death rates and ill health (mortality and morbidity) across the UK.</p>	AoS needs to consider all vulnerable groups, including children.
A Children's Environment and Health Strategy for	<p>This document provides an overview of current activities in the UK. Following a public consultation process, recommendations will be made on the measures necessary to improve children's and young people's environmental health in the UK as well as encouraging a coherent cross-government approach. This strategy</p>	AoS needs to consider all vulnerable groups, including children.

the United Kingdom (2009)	<p>aims to build on and complement policies and activities already undertaken by government departments, devolved administrations, local and regional authorities and the National Health Service (NHS). Some areas for improvement highlighted in this strategy include:</p> <ul style="list-style-type: none"> • counteracting the increased number of overweight and obese children and young adults, coupled with improving the amount of physical activity they undertake • addressing concerns regarding the number of children whose asthma is affected by air pollution and the effects of air pollution on the long-term lung function of children 	
Air Quality Standards Regulations 2010 as amended by The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019	These regulations set legally binding limits for concentrations in outdoor air of major air pollutants that impact public health such as particulate matter (PM10 and PM2.5) and nitrogen dioxide (NO2). As well as having direct effects, these pollutants can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas) which can be transported great distances by weather systems. It also incorporates the 4th air quality daughter directive that sets targets for levels in outdoor air of certain toxic heavy metals and polycyclic aromatic hydrocarbons.	Ensure the inclusion of an air quality objective within the AoS framework.
Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007	This Air Quality Strategy sets out air quality objectives and policy options to further improve air quality in the UK from today into the long term. As well as direct benefits to public health, these options are intended to provide important benefits to quality of life and help to protect our environment.	Ensure the inclusion of an air quality objective within the AoS framework.

<p>Clean Air Strategy, 2019</p>	<p>The Clean Air Strategy explains how the UK Government will tackle all sources of air pollution, sets out policy direction, and outlines measures that will drive the move to zero emission transport modes. The strategy links into other national level policies, outlining the same targets and strategies across multiple documents.</p> <p>The strategy includes numerous aims and goals, many drawn from other policy documents, that are collated in brief in the executive summary. These are framed in the following topics:</p> <ul style="list-style-type: none"> • protecting the nation's health; • protecting the environment; • securing clean growth and innovation; • action to reduce emissions from transport; • action to reduce emissions at home; • action to reduce emissions from farming; • action to reduce emissions from industry; and • leadership at all levels. <p>The Clean Air Strategy effectively summarises government policy with an impact on air quality from multiple different areas. Multiple government initiatives are listed where action has been taken by central government. Of particular importance, and reinforced by the Clean Air Strategy, is the adoption of challenging and enforceable local Air Quality Strategies.</p>	<p>Ensure the inclusion of an air quality objective within the AoS framework.</p>
<p>Air Quality Plan for Nitrogen Dioxide in the UK, 2017</p>	<p>Jointly produced by the DfT and DEFRA, this national plan determines an approach for areas with the worst levels of traffic-related air pollution to mitigate the effects. It sets out the framework for Clean Air Zones, allowing for targeted</p>	<p>Ensure the inclusion of an air quality objective within the AoS framework.</p>

	<p>action to improve air quality in the “shortest possible time” as required by legal obligations to meet NO2 concentration thresholds.</p> <p>The document also sets out plans for ending the sale of new, conventional petrol and diesel cars and vans by 2040. The plan argues that NO2 accumulation is a local issue, as the pollutants do not disperse widely like greenhouse gasses. In line with this local approach, the plan sets out support to local authorities, including:</p> <ul style="list-style-type: none"> • setting up a £255 million Implementation Fund; • establishing a Clean Air Fund; and • providing £100m for retrofitting and new low emission buses. <p>The plan outlines the introduction of several new funding streams that local authorities can utilise to finance measures to reduce NO2 emissions.</p>	
Climate Change Act 2008 and its 2050 Target Amendment Order, 2019	<p>The Act aims to improve carbon management, helping the transition towards a low-carbon economy in the UK and to demonstrate UK leadership internationally. Key provisions of the Act include:</p> <ul style="list-style-type: none"> • a legally binding target of at least an 80% cut in greenhouse gas emissions by 2050 and a reduction in emissions of at least 34% by 2020 (both against 1990 baseline). Note the 2050 target has now been amended to Net Zero • a carbon budgeting system that caps emissions over five-year periods; • creation of the Committee on Climate Change; • further measures to reduce emissions, including measures on biofuels; • a requirement for the Government to report at least every five years on the risks to the UK of climate change, and to publish a programme setting out how these will be addressed. 	Ensure that climate change resilience is addressed within the AoS framework through the inclusion of an appropriate objective. Note also the amended Target of Net Zero by 2050.

	<p>The Act also introduces powers for Government to require public bodies and statutory undertakers to carry out their own risk assessment and make plans to address those risks</p>	
Decarbonising Transport: Setting the Challenge 2020	<p>Setting the Challenge is a policy and baselining report, establishing the groundwork from which a latter 2020 Transport Decarbonisation Plan (TDP) will work. It is not a plan in itself. The TDP was planned to be published ahead of the 2020 United Nations Framework Convention on Climate Change Conference in November 2020. No word has been given on a delayed release date, given the postponement of the conference to November 2021 due to the Coronavirus pandemic.</p> <p>Regardless, it is intended that the TDP will put forward a credible implementation plan for how ambitious greenhouse gas and decarbonisation targets will be met across the whole UK transport network.</p> <p>Setting the Challenge therefore investigates the role of transport in carbon and other greenhouse gas emissions, and gives the current position of each transport mode, in terms of emission levels, compared to historical emissions, describes related current governmental aims and targets, and lists current policies aiming to deliver planned targets and future work.</p> <p>The priorities for the Government, further distilled in the ministerial foreword, appear to be as follows:</p> <ul style="list-style-type: none"> • Public transport and active travel will be the natural first choice for our daily activities. We will use our cars less and be able to rely on a convenient, cost-effective and coherent public transport network. 	<p>Ensure that reduction of Carbon, with a particular emphasis on road transport is included as an Objective within the AoS.</p> <p>Ensure that reducing the need to travel by car is included as an Objective within the AoS.</p>

	<ul style="list-style-type: none"> • From motorcycles to HGVs, all road vehicles will be zero emission. Technological advances, including new modes of transport and mobility innovation, will change the way vehicles are used. • Our goods will be delivered through an integrated, efficient and sustainable delivery system. • Clean, place-based solutions will meet the needs of local people. Changes and leadership at a local level will make an important contribution to reducing national GHG emissions. • The UK will be an internationally recognised leader in environmentally sustainable, low carbon technology and innovation in transport. <p>We will lead the development of sustainable biofuels, hybrid and electric aircraft to lessen and remove the impact of aviation on the environment and by 2050, zero emission ships will be commonplace globally.</p>	
UKCP18	<p>The UK Climate Projections (UKCP) provides the most up-to-date assessment of how the UK climate may change in the future. UKCP18 provides a new set of climate projections and tools to access climate data. The major innovations in UKCP18 include the use of new observations of weather and climate, inclusion of a more recent generation of climate models from around the world and the results from latest Met Office global and regional climate models.</p> <p>The projections can then be used to inform guidance such as the Environment Agency's guidance on flood risk assessment.</p>	The AoS framework should consider objectives that would promote an improved resilience to climate change.
Planning Practice Guidance – Climate Change 2019	Advises how planning can identify suitable mitigation and adaptation measures in plan-making and the planning application process to address the potential impacts of climate	Ensure that climate change resilience is addressed within the AoS framework through

		the inclusion of an appropriate objective.
Clean Growth Strategy 2017	<p>The Clean Growth Strategy deals specifically with the challenge of trying to grow the UK's economy whilst reducing its emissions. This issue is dealt with across multiple strategies, and several sectors have a large role to play. This strategy details the approach of each sector and sets out key policies for each</p> <p>The guiding principles of the Clean Growth Strategy are to, through nurturing low carbon technologies, processes, and systems:</p> <ul style="list-style-type: none"> • meeting the UK's domestic commitments at the lowest possible net cost to UK taxpayers, consumers, and businesses; and • maximising the social and economic benefits for the UK from this transition. • The key policies to achieve this are sorted into the following categories: • accelerating clean growth; • improving business and industry efficiency (25% of emissions); • improving our homes (13% of emissions); • accelerating the shift to low carbon transport (24% of emissions); • delivering clean, smart, flexible power (21% of emissions); • enhancing the benefits and value of our natural resources (15% of emissions); • leading in the public sector (2% of emissions); and • government leadership in driving clean growth. <p>Regarding transport, the primary aim described in detail is a pathway to, by 2032, achieve a 32% reduction in carbon emissions compared to 1990, by:</p> <ul style="list-style-type: none"> • accelerating uptake of ULEVs; • developing a more efficient and low carbon freight system; 	<p>AoS needs to recognise the importance of reducing emissions – including Carbon and all other GHG, as well as the full range of air pollutants. This strategy sets out ways in which this can be achieved.</p>

	<ul style="list-style-type: none"> • a cleaner public transport system; • a reduction in the number of shorter journeys made by car; and • a near doubling of sustainable bioenergy used in the transport sector. 	
The Road to Zero, 2018	<p>The Road to Zero strategy is a broad governmental “next steps” policy that outlines an ambition to decarbonise transport, and to strengthen the UK’s offering in design and manufacturing of zero emission vehicles, and the role of zero emission road vehicles in the government’s Industrial Strategy. The strategy is aligned to other national policies mentioned in this section.</p> <p>The policy sets targets for 50-70% of new car sales, and up to 40% of new van sales to be ultra-low emission by 2030. To support this, emphasis is given to several key policies:</p> <ul style="list-style-type: none"> • reducing emissions from the vehicles already on our roads; • driving the uptake of the cleanest vehicles; • reducing emissions from heavy goods vehicles (HGVs) and road freight; • putting the UK at the forefront of the design and manufacturing of zero emission vehicles; and • supporting the development of one of the best electric vehicle infrastructure networks in the world • supporting local actions. <p>The strategy sets out in detail the challenges brought about by the emissions of road transport, and the specifics of how different types of road transport produce these emissions. The strategy also acknowledges the difficulty in maintaining a required level of road use for vital travel, commerce, and services, whilst restricting vehicle choice. Given the significant consequences of failing to act to</p>	<p>AoS needs to recognise the importance of reducing emissions – including Carbon and all other GHG. This policy sets out ways in which this can be achieved.</p>

	<p>reduce emissions, the report strikes a balance to prioritise reductions in emissions and maintain economic growth.</p> <p>Although the strategy refers to changes in travel modes for certain types of journeys, the emphasis of the report lies with maintaining a required level of road travel, with reductions in emissions achieved through encouraging a high proportion of low-emission vehicles on the roads.</p>	
Environment Act 1995	<p>The Environment Act 1995 updates much of the earlier legislation on the areas that it extends to. The Act comprises:</p> <ul style="list-style-type: none"> • Part 1 the Environment Agency and the Scottish Environmental Protection Agency, • Part II Contaminated Land and Abandoned Mines, • Part III National Parks • Part IV Air Quality, • Part V Miscellaneous, General and Supplemental Provisions (e.g. waste, mineral planning permissions, hedgerows, drainage, fisheries etc.). 	<p>Ensure that a range of environmental objectives such as air quality protection are considered in relation to the AoS.</p>
National Infrastructure Strategy	<p>The National Infrastructure Strategy sets out the government's plans to transform the UK's infrastructure networks. It is based around three central objectives: economic recovery; levelling up and strengthening the Union; and meeting the UK's net zero emissions target by 2050. This will be enabled by clear support for private investment and through a comprehensive set of reforms to the way infrastructure is delivered.</p>	<p>The AoS should consider including objectives that address the reduction of greenhouse gas emissions, as well as objectives that promote the transformation to an energy-efficient low carbon economy.</p>

	This Strategy sets out early actions that the government will take to build the infrastructure needed to achieve net zero, improve air quality, create a greener urban environment, and minimise the impact of flooding.	
National Infrastructure Assessment 2018	The Assessment analyses the UK's long-term economic infrastructure needs, outlining a strategic vision over the next 30 years and setting out recommendations for how identified needs should be met. The Assessment provides a long term strategy for how to adapt the UK's infrastructure to deal with the pressures of climate change.	Ensure that climate change resilience is addressed within the AoS framework through the inclusion of an appropriate objective.
Climate, people, places and value Design principles for national infrastructure, National Infrastructure Commission,	<p>The design principles for national infrastructure are:</p> <p>Mitigate greenhouse gas emissions and adapt to climate change: The design of our infrastructure must help set the trajectory for the UK to achieve net zero greenhouse gas emissions by 2050 or sooner. This means opportunities must be sought during design and construction to enable the decarbonisation of our society and mitigate and offset residual emissions. Our infrastructure has to support an environmentally sustainable society. It should enable the people and businesses using it to reduce their wider climate impacts too. The search for these opportunities should not be restricted to the area within the site boundary. And good design incorporates flexibility, allowing the project to adapt over time and build our resilience against climate change.</p> <p>Reflect what society wants and share benefits widely: Infrastructure should be designed for people, not for architects or engineers. It should be human scale, easy to navigate and instinctive to use, helping to improve the quality of life of everyone who comes into contact with it. This means reliable and inclusive services. It means accessible, enjoyable and safe spaces with clean air that</p>	

improve health and wellbeing. The range of views of communities affected by the infrastructure must be taken into account and reflected in the design. While it won't always be possible to please everyone, engagement should be diverse, open and sincere, addressing inevitable tensions in good faith and finding the right balance. And it should not just be designed for people today. Good design will plan for future changes in demographics and population.

Provide a sense of identity and improve our environment: Well-designed infrastructure supports the natural and built environment. It gives places a strong sense of identity, and through that forms part of our national cultural heritage. It makes a positive contribution to local landscapes within and beyond the project boundary. Projects should be inspiring in form and detail, respecting and enhancing local culture and character without being bound by the past. Good design supports local ecology, which is essential to protect and enhance biodiversity. Projects should make active interventions to enrich our ecosystems. They should seek to deliver a net biodiversity gain, contributing to the restoration of wildlife on a large scale while protecting irreplaceable natural assets and habitats.

Achieve multiple benefits and solve problems well: A good design process adds value by defining issues clearly from the outset and providing overall direction for everyone working on a project. It explores every option for increasing value alongside the creative process. This approach means the brief is interrogated rigorously so that opportunities to secure economic, environmental and social benefits are identified, pursued and articulated for local and national audiences. Good design also finds opportunities to add value beyond the main purpose of the infrastructure. It looks beyond the site boundary to consider the wider benefits the project can bring. It seeks to solve multiple problems well with a

	<p>single solution. It provides more for less with savings on cost, the environment, materials and space.</p> <p>The Commission identified a need for championing of good design at board level on projects. The first National Infrastructure Assessment recommended that a board level design champion be appointed for every nationally significant infrastructure project. Their role will be to make sure good design is prioritised from the early stages of a project, provide a continual emphasis on that design vision throughout and hold board members and project management to account for delivering those design objectives. The first National Infrastructure Assessment also recommended that design review panels should be set up for every nationally significant infrastructure project. Design review panels exist on some projects currently and there are some good examples. But the opportunity to do better should not be missed—all major infrastructure projects deserve to have design review panels. Like design champions, review panels need to be involved early enough for their advice to shape project design. They will advocate for improvements to design that will improve the outcomes of the project, taking advantage of opportunities to achieve better value.</p>	
<p>The Economics of Biodiversity: The Dasgupta Review, 2021</p>	<p>Headline messages:</p> <p>We are part of Nature, not separate from it. We rely on Nature to provide us with food, water and shelter; regulate our climate and disease; maintain nutrient cycles and oxygen production; and provide us with spiritual fulfilment and opportunities for recreation and recuperation, which can enhance our health and well-being. We also use the planet as a sink for our waste products, such as carbon dioxide, plastics and other forms of waste, including pollution. Nature is therefore an asset, just as produced capital (roads, buildings and factories) and</p>	

human capital (health, knowledge and skills) are assets. Like education and health, however, Nature is more than an economic good: many value its very existence and recognise its intrinsic worth too. Biodiversity enables Nature to be productive, resilient and adaptable. Just as diversity within a portfolio of financial assets reduces risk and uncertainty, so diversity within a portfolio of natural assets increases Nature's resilience to shocks, reducing the risks to Nature's services. Reduce biodiversity, and Nature and humanity suffer.

We have collectively failed to engage with Nature sustainably, to the extent that our demands far exceed its capacity to supply us with the goods and services we all rely on. We are all asset managers. Individuals, businesses, governments and international organisations all manage assets through our spending and investment decisions. Collectively, however, we have failed to manage our global portfolio of assets sustainably. Estimates show that between 1992 and 2014, produced capital per person doubled, and human capital per person increased by about 13% globally; but the stock of natural capital per person declined by nearly 40%. Accumulating produced and human capital at the expense of natural capital is what economic growth and development has come to mean for many people. In other words, while humanity has prospered immensely in recent decades, the ways in which we have achieved such prosperity means that it has come at a devastating cost to Nature. Estimates of our total impact on Nature suggest that we would require 1.6 Earths to maintain the world's current living standards. The Review calls the imbalance between our demands and Nature's supply the 'Impact Inequality'. Those demands are affected by the size and composition of our individual demands, the size of the human population, and the efficiency with which we both convert Nature's services to meet our demands

and return our waste back into Nature. Nature's supply is affected by the 'stock' of natural assets and its ability to regenerate.

Our unsustainable engagement with Nature is endangering the prosperity of current and future generations. Biodiversity is declining faster than at any time in human history. Current extinction rates, for example, are around 100 to 1,000 times higher than the baseline rate, and they are increasing. Such declines are undermining Nature's productivity, resilience and adaptability, and are in turn fuelling extreme risk and uncertainty for our economies and well-being. The devastating impacts of COVID-19 and other emerging infectious diseases – of which land-use change and species exploitation are major drivers – could prove to be just the tip of the iceberg if we continue on our current path. Many ecosystems, from tropical forests to coral reefs, have already been degraded beyond repair, or are at imminent risk of 'tipping points'. These tipping points could have catastrophic consequences for our economies and well-being; and it is costly and difficult, if not impossible, to coax an ecosystem back to health once it has tipped into a new state. Low income countries, whose economies are more reliant than high income countries on Nature's goods and services from within their own borders, stand to lose the most. Reversing these trends requires action now. To do so would be significantly less costly than delay, and would help us to achieve wider societal goals, including addressing climate change (itself a major driver of biodiversity loss) and alleviating poverty.

At the heart of the problem lies deep-rooted, widespread institutional failure. Nature's worth to society – the true value of the various goods and services it provides – is not reflected in market prices because much of it is open to all at no monetary charge. These pricing distortions have led us to invest relatively more in other assets, such as produced capital, and underinvest in our natural assets.

Moreover, aspects of Nature are mobile; some are invisible, such as in the soils; and many are silent. These features mean that the effects of many of our actions on ourselves and others – including our descendants – are hard to trace and go unaccounted for, giving rise to widespread ‘externalities’ and making it hard for markets to function well. But this is not simply a market failure: it is a broader institutional failure too. Many of our institutions have proved unfit to manage the externalities. Governments almost everywhere exacerbate the problem by paying people more to exploit Nature than to protect it, and to prioritise unsustainable economic activities. A conservative estimate of the total cost globally of subsidies that damage Nature is around US\$4 to 6 trillion per year. And we lack the institutional arrangements needed to protect global public goods, such as the ocean or the world’s rainforests. The 15th Conference of the Parties to the Convention on Biological Diversity (COP15) and the 26th Conference of the Parties to the UN Framework Convention on Climate Change (COP26) provide important opportunities to set a new, ambitious direction for the coming decade, and establish the right environment to deliver on commitments made and the institutional arrangements needed to ensure those commitments are met.

The solution starts with understanding and accepting a simple truth: our economies are embedded within Nature, not external to it. While most models of economic growth and development recognise that Nature is capable only of producing a finite flow of goods and services, the focus has been to show that technological progress can, in principle, overcome that exhaustibility. This is to imagine that, ultimately, humanity is ‘external’ to Nature. The Review develops the economics of biodiversity on the understanding that we – and our economies – are ‘embedded’ within Nature, not external to it. The Review’s approach is based firmly in what we know from ecology about how ecosystems function, and how they are affected by economic activity, including the extraction of natural

resources for our production and consumption, and the waste we produce through these activities, which ultimately damages ecosystems and undermines their ability to provide the services on which we rely. This approach helps us to understand that the human economy is bounded and reshapes our understanding of what constitutes truly sustainable economic growth and development: accounting fully for the impact of our interactions with Nature and rebalancing our demand with Nature's capacity to supply.

We need to change how we think, act and measure success. Humanity faces an urgent choice. Continuing down our current path – where our demands on Nature far exceed its capacity to supply – presents extreme risks and uncertainty for our economies. Sustainable economic growth and development requires us to take a different path, where our engagements with Nature are not only sustainable, but also enhance our collective wealth and well-being and that of our descendants. Choosing a sustainable path will require transformative change, underpinned by levels of ambition, coordination and political will akin to, or even greater than, those of the Marshall Plan. The change required should be geared towards three broad transitions:

- (i) Ensure that our demands on Nature do not exceed its supply, and that we increase Nature's supply relative to its current level.
- (ii) Change our measures of economic success to guide us on a more sustainable path.
- iii) Transform our institutions and systems – in particular our finance and education systems – to enable these changes and sustain them for future generations.

Transformative change is possible – we and our descendants deserve nothing less.

The Invasive Alien Species (Enforcement and Permitting) Order 2019	The Invasive Alien Species (Enforcement and Permitting) Order 2019 ensures an enforcement regime is in place to enforce the Principal EU Regulation (1143/2014) in England and Wales, which is designed to prevent, minimise or mitigate the adverse impact of the introduction and spread of invasive alien species.	Ensure AoS considers introduction and spread of invasive alien species.
The Great Britain Invasive Non-native Species Strategy 2023	<p>Invasive Non-native Species are one of the top five drivers of biodiversity loss globally. They threaten Great Britain's ability to meet wider environmental targets and respond to climate change.</p> <p>Strategy sets out aims to guide collaboration between government, voluntary organisations, NGOs, researchers, businesses and the public to 2030.</p>	Ensure the AoS considers the potential for the spread of INNS.
Ancient Woodland Inventory	The AWI is a provisional guide and map-based tool to the location of Ancient and long established Woodland. Ancient woodland is defined as land that is currently wooded and has been continually wooded in England and Wales at least since 1600 and Scotland since at least 1750. This type of woodland has important biodiversity and cultural values by its virtue of its antiquity.	Ensure flora and fauna is considered within the AoS framework
The Agriculture Act 2020	<p>The Agriculture Act underpins a new agricultural system based on the principle of public money for public goods.</p> <p>It includes the following:</p>	Ensure that a range of environmental objectives are considered in relation to the AoS.

	<ul style="list-style-type: none"> • Powers to give financial assistance. Payments may encompass (but are not limited to) environmental protection, public access to the countryside and measures to safeguard livestock and plants. • Provisions requiring the Secretary of State to report to Parliament on whether, or to what extent, provisions in free trade agreements (FTAs) that relate to agricultural products are consistent with the maintenance of UK statutory levels of protection in relation to human, animal and plant life or health; animal welfare; and the environment. 	
Heritage Protection for the 21st Century 2007	<p>The paper sets out a vision of a unified and simpler heritage protection system, which will have more opportunities for public involvement and community engagement. The proposed system will be more open, accountable and transparent. It will offer all those with an interest in the historic environment a clearer record of what is protected and why; it will enable people who own or manage historic buildings and sites to have a better understanding of what features are important; it will streamline the consent procedures and create a more consultative and collaborative protection system.</p> <p>It is predominantly aimed for England and Wales with some UK wide elements.</p>	Ensure historic environment objective within AoS framework.
Ancient Monuments and Archaeological Areas Act 1979	<p>Under the Act a monument which has been scheduled is protected against any disturbance including unlicensed metal detecting.</p> <p>Permission must be obtained for any work which might affect a monument above or below ground. Historic England gives advice to the Government on each application. In assessing an application, the Secretary of State will try to ensure any works on protected sites are beneficial to the site or are essential for its long-term sustainability.</p>	Ensure historic environment objective within AoS framework.

Protection of Military Remains Act 1986	The Protection of Military Remains Act 1986 prohibits entering and tampering with wrecked military vessels or aircraft. All military aircraft is automatically protected under this legislation, but vessels need to be designated individually. The Act enabled the government to establish controlled sites around wrecks in UK water or protected places for those in international water. The legislation is administered by the Ministry of Defence.	Ensure historic environment objective within AoS framework.
National Heritage Act 1983 (as amended 2002)	The 1983 Act established the Historic Buildings and Monuments Commission (known as Historic England) and delegated the functions of scheduling of ancient monuments and listing of historic buildings. The National Heritage Act 2002 broadened the powers of Historic England in two ways. It allowed Historic England to become involved in underwater archaeology in English territorial water and to trade in overseas countries. These powers have now been transferred to Historic England.	Ensure historic environment objective within AoS framework.
The Protection of Wrecks Act 1973	The Protection of Wrecks Act 1973 allows the Government to designate a restricted area around the site of a vessel lying on or in the seabed in UK territorial waters if they are satisfied that, on account of the historical, archaeological or artistic importance of the vessel, or its contents or former contents, the site ought to be protected from unauthorised interference.	Ensure historic environment objective within AoS framework.
Government Heritage Statement 2017	This heritage statement sets out how the government will support the heritage sector and help it to protect and care for our heritage and historic environment in the coming years, in order to maximise the economic and social impact of heritage and to ensure that everyone can enjoy and benefit from it.	Ensure historic environment objective within AoS framework.

Planning (Listed Buildings and Conservation Areas) Act 1990	Governs special controls in respect of buildings and areas of special architectural or historic interest. Any alteration, extension or demolition of a listed building in a way that affects its character as a building of special interest requires Listed Building Consent.	Ensure historic environment objective within AoS framework.
National Parks and Access to the Countryside Act 1949	This was an act that made provision for National Parks and the establishment of a National Parks Commission. It was also to confer on the Nature Conservancy and local authorities' powers for the establishment and maintenance of nature reserves, it made further provision for the recording, creation, maintenance and improvement of public paths and for securing access to open country and to amend laws relating to rights of way.	Ensure that an objective relating to protecting the character and quality of important landscapes is included within the AoS framework.
Shoreline Management Plans	<p>A shoreline management plan (SMP) is a large-scale assessment of the risks associated with coastal processes and helps to reduce these risks to people and the developed, historic and natural environment. Shoreline management plans are developed by Coastal Groups with members mainly from local councils and the Environment Agency. There are 22 SMP's covering England and Wales. They identify the most sustainable approach to managing the flood and coastal erosion risks to the coastline in the:</p> <ul style="list-style-type: none"> • short-term (0 to 20 years) • medium term (20 to 50 years) • long term (50 to 100 years) 	Ensure that flood and coastal erosion risk is included as an objective within the AoS framework.
Flood Risk Management Plans	Flood risk management plans explain the risk of flooding from rivers, the sea, surface water, groundwater and reservoirs. FRMPs set out how risk management authorities will work with communities to manage flood risk over the next 6 years. They must cover areas of the river basin district (RBD) where flood risk is	Ensure that flood and coastal erosion risk is included as an

	<p>significant. These areas are called flood risk areas (FRAs). The Environment Agency and lead local flood authorities (LLFAs) identify FRAs through preliminary flood risk assessments.</p> <p>FRMPs also meet the aims of the National Flood and Coastal Erosion Strategy for England.</p>	objective within the AoS framework.
National Environment and Rural Communities Act 2006	<p>The Act establishes an independent body - Natural England - responsible for conserving, enhancing and managing England's natural environment for the benefit of current and future generations. Natural England will work in close partnership with other organisations and bodies that have a major role in relation to the natural environment, in particular the Environment Agency, the Forestry Commission, Historic England and local authorities. It established the Commission for Rural Communities and reconstitutes the Joint Nature Conservation Committee. Details of the act include:</p> <ul style="list-style-type: none"> • Nature Conservation in the UK • Wildlife • Sites of Special Scientific Interest • National Parks and the Broads • Rights of way • Inland Waterways • Flexible Administrative Arrangements 	Ensure that a range of environmental objectives such as wildlife protection, SSSI, National Parks, Inland Waterways etc are considered in relation to the AoS.
The Energy White Paper (2020)	The White Paper builds on the Ten Point Plan for a Green Industrial Revolution to outline the Government's domestic and international strategy for delivering net zero greenhouse gas emissions by 2050 through:	The AoS should consider including objectives that address the reduction of greenhouse gas emissions,

	<ul style="list-style-type: none"> • Shifting from fossil fuels and towards new low-carbon power and renewables, for example by investing £385 million in the Advanced Nuclear Fund; • Maintaining the affordability of energy for consumers; • Increasing energy efficiency of households, buildings and the energy system as a whole; and • Creating up to 250,000 'green' jobs by 2030 in a 'Green Industrial Revolution'. <p>The Paper sets out the aim to bring at least one further large-scale nuclear project to the point of Final Investment Decision by the end of this Parliament (i.e. expected to be by May 2024).</p>	as well as objectives that promote the transformation to an energy-efficient low carbon economy.
The Ten Point Plan for a Green Industrial Revolution (2020)	<p>The Ten Point Plan demonstrates the UK's progress towards reaching the legally binding obligation of reaching Net Zero greenhouse gas emissions by 2050, as in the last 30 years emissions have been cut by 43%. The cumulative effect of the Plan will be to reduce UK emissions by 180 Mt CO₂ e between 2023 and 2032. Key components of the Plan are:</p> <ul style="list-style-type: none"> • Investment in renewables such as offshore wind and hydrogen; • Investment in new and advanced nuclear power; • Carbon removal through investment in CCUS and wildlife protection; and • Demand reduction through shifts in transport and improving the efficiency of buildings. 	The AoS should consider including objectives that address the reduction of greenhouse gas emissions, as well as objectives that promote the transformation to an energy-efficient low carbon economy.
British Energy Security Strategy 2022	<p>Builds on the 'Ten point plan for a green industrial revolution', and the 'Net zero strategy'.</p> <p>This plan comes in light of rising global energy prices, provoked by surging demand after the pandemic as well as Russia's invasion of Ukraine. This will be central to weaning Britain off expensive fossil fuels, which are subject to volatile</p>	The AoS must be guided by this important overarching strategy.

	<p>gas prices set by international markets we are unable to control, and boosting our diverse sources of homegrown energy for greater energy security in the long-term.</p> <p>With regard to nuclear, the Strategy outlines the target that by 2050 up to a quarter of electricity consumed in Great Britain will be from nuclear (up to 24 GW by 2050). Nuclear may also have a part to play in production of hydrogen.</p>	
Energy Innovation Programme (EIP) (2015-2021)	<p>Aimed to accelerate the commercialisation of innovative “clean” energy technologies and processes into the 2020s and 2030s. The Programme budget of £505M consisted of 6 themes:</p> <ul style="list-style-type: none"> • £70M in smart systems • £90M in the built environment (energy efficiency and heating) • £100M in industrial decarbonisation and CCUS • £180M in nuclear innovation • £15M in renewables innovation • £50M in support for energy entrepreneurs and green financing <p>The Programme was replaced by the Net Zero Innovation Portfolio.</p>	The AoS must acknowledge the Government’s efforts to accelerate nuclear innovation.
Net Zero Innovation Portfolio and Advanced Nuclear Fund (2021-2025)	<p>Net Zero Innovation Portfolio is a £1B fund, announced in the 2020 Ten Point Plan for a Green Industrial Revolution. It aims to accelerate commercialisation of low-carbon technologies and decrease the costs of decarbonisation. The 10 priority areas are:</p> <ul style="list-style-type: none"> • Future offshore wind • Nuclear advanced modular reactors (supported through the aligned £385M Advanced Nuclear Fund) • Energy storage and flexibility 	The AoS must acknowledge the Government’s efforts to accelerate low carbon innovation.

	<ul style="list-style-type: none"> • Bioenergy • Hydrogen • Homes • Direct air capture and greenhouse gas removal • Advanced CCUS • Industrial fuel switching • Disruptive technologies 	
Powering up Britain: The Net Zero Growth Plan 2023	<p>This plan is published alongside Powering Up Britain – Energy Security. These two plans set out policies which will ensure delivery of energy security and increase the UK’s international economic competitiveness, while delivering on net zero. There are two sides of this: Powering Up Britain – Energy Security is focused on changing decades of reliance on imported fossil fuels, by reducing demand and boosting home grown energy, giving energy resilience the priority it deserves. Powering Up Britain – the Net Zero Growth Plan focuses on our long-term decarbonisation trajectory and how it can improve the UK’s competitiveness, deliver an industrial renaissance and level up the whole of the United Kingdom.</p> <p>The plan outlines the Government’s progress since 2022 in greater detail and summarises next steps to delivering for various sectors: each responsible for a defined range of carbon savings between now and 2050. Sectors cover Power; Fuel Supply & Hydrogen; Industry; Heat and Buildings; Transport; Natural Resources, Waste and F-gases; and Greenhouse Gas Removals (GGRs).</p> <p>Details of some actions the government is planning for sectors relevant to the NPSs:</p> <p>Power: set up Great British Nuclear, with the responsibility to lead delivery of the new nuclear programme, backed with the funding it needs; launch a competitive</p>	The AoS must acknowledge the Government’s commitment to energy security and the need to deliver on net zero commitments.

	<p>process to select the best Small Modular Reactor technologies, with first phase commencing in April 2023; consult in 2023 on the need and potential design options for market intervention to support hydrogen to power; publish an action plan this year in response to Electricity Networks Commissioner Nick Winser's recommendations on halving the development time for transmission network projects; establish a solar government/industry taskforce and we will publish a solar roadmap setting out a clear step by step deployment trajectory to achieve 70GW of solar by 2035.</p> <p>Fuel Supply and Hydrogen</p> <p>Hydrogen: Enter due diligence with 20 projects in the first electrolytic hydrogen allocation round (HAR1), through which intend to award contracts in Q4 2023 totalling up</p> <p>to 250MW of capacity; aim to launch a second electrolytic hydrogen allocation round (HAR2) in Q4 2023 and aim to award contracts to up to 750MW of capacity in early 2025, to deliver up to 1GW of electrolytic low carbon hydrogen production capacity in construction or operation by 2025; aim to engage with industry on the draft full form Low Carbon Hydrogen Agreement</p> <p>(LCHA) in Q2 2023 with the intention of publishing the final LCHA for initial projects from Q3 2023; intend to launch a second competition window for strands 1&2 of the NZHF in spring 2023, to be run by UKRI and provide further funding routes for development and capital costs of low carbon hydrogen production projects that do not require revenue support; aim to publish a response to our consultation on the design of business models to support hydrogen T&S</p>	
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	<p>infrastructure by the end of Q2 2023, with any further details on strategic planning to align with the production roadmap. To bring forward</p> <p>hydrogen T&S business models, we are aiming to introduce legislative measures when parliamentary time allows, which will be crucial to designing these new business models by 2025; aim to publish a delivery roadmap this year to show how hydrogen production can be scaled up over the coming decade; publish the first revisions of the UK Low Carbon Hydrogen Standard this year.</p> <p>Oil and gas: exclusivity Arrangements awarded by Crown Estate Scotland to INTOG projects; the first licenses from the 33rd Offshore Oil and Gas Licensing Round in Q2 of 2023; further moves from industry towards our target of ending routine flaring & venting by 2030; future industry investment decisions to deliver the first electrification projects.</p> <p>For carbon capture, Usage, and Storage: Work with industry to progress development of non-pipeline transport in a timeframe consistent with our Track-2 objectives, supporting decarbonisation of</p> <p>sites away from CO2 stores or industrial clusters suggested in the Independent Review of Net Zero; ensure additional clusters identified for 2030 or expansion of the first two clusters can demonstrate options for the delivery of non-pipeline transport projects from 2030; set out a vision for the UK CCUS sector to raise confidence and improve visibility for investors as suggested in the Independent Review of Net Zero; shortly publish an updated investment roadmap on CCUS, summarising government policy and funding, to provide investors with the information they need to support investment decisions.</p>	
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Natural Resources: continue to roll out our ELM schemes, with all three operating in full by 2024-5; publish a Land Use Framework for England in 2023; publish a Biomass Strategy in 2023. The Biomass Strategy will review the amount of sustainable biomass available to the UK and how this resource could be best utilised across the economy to help achieve the government's net zero and wider

environmental commitments while also supporting energy security. This includes providing early thinking on domestic biomass production, including short rotation forestry and perennial energy crops; respond to the call for evidence on the UK Emissions Trading Scheme (ETS) potential role as a long-term market for nature-based and engineered greenhouse gas removals.

Waste: develop a plan to achieve the near elimination of biodegradable municipal waste going to landfill from 2028 following a call for evidence; respond to our call for evidence on the initial expansion of the UK Emissions Trading Scheme to cover waste incineration and energy from waste.

Greenhouse Gas Removals: publish government responses and next steps following a review of the GGR business model and power BECCS business model consultation responses. For the

GGR consultation response, this includes having reflected on input from our GGR Business Model Expert Group meetings; work within the UK ETS Authority to consider options for integrating GGRs in the

UK ETS subject to the outcomes of last year's UK ETS consultation, a robust monitoring, reporting and verification (MRV) regime being in place, and the management of wider impacts - including market stability and the permanence of the emissions stored by the GGRs. Further detail will be provided in the

	Government Response to the UK ETS consultation in due course; monitor the progress of the DAC and GGR Innovation Programme which will be in the process of building pilot/demonstration projects to be fully operational by March 2025; publish the Biomass Strategy in 2023, which will outline the role that BECCS can play in reducing carbon emissions across the economy and set out how the technology could be deployed.	
Salmon and Freshwater Fisheries Act 1975	Created to protect particularly salmon and trout from commercial poaching, to protect migration routes, to prevent wilful vandalism and neglect of fishery's and to ensure correct licensing and water authority approval. Part II of the Act deals with obstructions to the passage of fish, including fishing weirs, screens and sluices; dictating when and where they can be used. Part III explains the proper times of fishing, selling and exporting fish.	The AoS should consider objectives that promote the protection and enhancement of the water environment as a habitat for salmon and freshwater fish. Such development has the potential to cause detriment to the quality of marine habitat during construction, operation and decommissioning phases.
Eels (England and Wales) Regulations 2009	These regulations afford powers to the Environment Agency to implement measures for the recovery of European eel stocks all freshwater and estuarine waters and have important implications for operators of abstractions and discharges.	The AoS should consider objectives that promote the protection and enhancement of the water environment as a habitat for eels. Such development has the potential to cause detriment to the quality of marine habitat

		during construction, operation and decommissioning phases
Fisheries Act 2020	<p>The Fisheries Act will enable the UK to control who fishes in their waters through a new foreign vessel licencing regime and ends the current automatic rights for EU vessels to fish in UK waters.</p> <p>Underpinning the Act is a commitment to sustainability, ensuring that fish and aquaculture activities are environmentally sustainable in the long term. The UK Government and Devolved Administrations are required to develop new fisheries management plans for managing fisheries to benefit the fishing industry and the marine environment.</p>	The AoS should give particular regard to sustainable management of fisheries. Such development has the potential to cause detriment to the quality of marine habitat during construction, operation and decommissioning phases
The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017	Looks at the ecological health of surface water bodies as well as traditional chemical standards. In particular, it will help deal with, amongst others diffuse pollution, habitat, ecology, hydromorphology, barriers to fish movement, water quality, flow and sediment. Successful implementation will help to protect all elements of the water cycle and enhance the quality of our groundwater, rivers, lakes, estuaries and seas.	Nuclear power stations require water abstractions and discharges and have the potential to have significant adverse effects to water environments. The AoS should consider objectives which focus on the protection of all aspects of the water environment.

Historic Buildings and Ancient Monuments Act 1953	<p>This Act provides for the preservation and acquisition of buildings of outstanding historic or architectural interest and their contents and related property, and to amend the law relating to ancient monuments and other objects of archaeological interest.</p>	<p>The AoS should consider risks to cultural heritage assets through construction and operation which might otherwise result in unacceptable change or damage to such assets or their setting.</p>
Flood and Water Management Act 2010	<p>This act provides for a better, more comprehensive management of flood risk for people, homes and businesses, helps safeguard community groups from unaffordable rises in surface water drainage charges and protects water supplies to the consumer. The key concepts include:</p> <ul style="list-style-type: none"> • Flood and Coastal Erosion Risk Management • Strategies for Natural flood and coastal erosion • The establishment of regional flood and coastal communities. 	<p>Ensure that flood risk and coastal erosion risk is included as an objective within the AoS framework.</p>
River Basin Management Plans	<p>These plans set out how organizations, stakeholders and communities will work together to improve the water environment. A RBD covers an entire river system, including river, lake, groundwater, estuarine and coastal water bodies and are designed to protect and improve the quality of the water environment.</p>	<p>Ensure that the issue of water quality protection and enhancement is included as an Objective within the AOS framework.</p>
Flood Risk Regulations 2009	<p>The Regulations identify and take action in areas with the most significant flood risks.</p>	<p>Ensure that flood and coastal erosion risk is included as an</p>

	<p>The purpose of the Act is to:</p> <ul style="list-style-type: none"> • Introduce the concept of flood risk management and the framework for the delivery of flood and coastal erosion risk management through national and local strategies • Provide new definitions, for example “flood”, “surface runoff”, “Risk Management Authorities”, Lead Local Flood Authority” • Establish the roles and responsibilities of the different risk management authorities 	objective within the AoS framework.
The Water Act 2014	The Water Act 2014 received Royal Assent in May 2014. The aim of the Act is to reform the water industry to make it more innovative and responsive to customers and to increase the resilience of water supplies to natural hazards such as droughts and floods.	Ensure that the issue of water supply resilience is included as an Objective within the IIA framework.
Water Resources Act 1991	<p>This Act aims to prevent and minimise pollution of water. The policing of this act is the responsibility of the Environment Agency and Natural Resources Wales. Under the act it is an offence to cause or knowingly permit any poisonous, noxious or polluting material, or any solid waste to enter any controlled water.</p> <p>Silt and soil from eroded areas are included in the definition of polluting material. If eroded soil is found to be polluting a water body or watercourse, the Environment Agency may prevent or clear up the pollution, and recover the damages from the landowner or responsible person</p>	Ensure that the issue of water quality protection and enhancement is included as an Objective within the IIA framework.
Resource Security Action Plan 2012	This document was developed in response to private sector concerns about the availability of some raw materials. It details how the government recognises these issues, provides a framework for business action to address resource risks, and	Ensure that waste minimisation and resource

	sets out a high-level actions to build on the developing partnership between government and businesses to address resource concerns.	efficiency are included as an Objective within the AoS.
Environmental Noise Regulations 2006	The European Environmental Noise Directive (END) is implemented in England by The Environmental Noise (England) Regulations 2006, in Wales by The Environmental Noise (Wales) Regulations 2006 and in Scotland by The Environmental Noise (Scotland) Regulations 2006 and seeks to manage the impact of environmental noise through strategic noise mapping and the preparation and implementation of noise Action Plans. Under these regulations, the third round of strategic noise mapping has been undertaken and updated Noise Action Plans have been prepared.	Ensure that the health and well-being of people is addressed through an objective in the AoS framework and that noise issues are considered.
Transport Act 2000	<p>The aim of the Act is to give effect to the Government's strategy for an integrated transport policy set out in the White Paper "A New Deal for Transport: Better for Everyone" (Cm 3950) published in July 1998.</p> <p>This Act contains measures to create a more integrated transport system and provide for a public-private partnership for National Air Traffic Services Ltd ("NATS"). The Act aimed to improve quality in local passenger transport services such as helping limit traffic congestion and improving air quality as well introducing road user charges and workplace parking levies to help tackle congestion.</p> <p>The use of railways was promoted through the Strategic Rail Authority and makes provision for the better regulation of the railway industry.</p>	No implications. Informative only.
Local Transport Act 2008	This act makes further provision in relation to local transport authorities, the provision and regulation of road transport services and the subsidising of passenger transport services. It looks at important areas of public transport such	No implications. Informative only.

	as local bus services and sets out proposals for a more consistent approach to local transport planning. It plans to reform the existing laws on road pricing schemes for local authorities who wish to have schemes in their areas.	
National Policy Statement for National Networks 2014	<p>The ‘National networks national policy statement’ sets out the:</p> <ul style="list-style-type: none"> • need for development of road, rail and strategic rail freight interchange projects on the national networks • the policy against which decisions on major road and rail projects will be made <p>Baseline information relating to relevant environmental, social and economic issues was also released as part of a draft consultation. The NPS will be used by the Secretary of State as a primary basis for making decisions on development consent applications for national networks.</p>	No implications. Informative only.
Network Rail Delivery Plan 2019-2024	<p>At a national level, Network Rail has set out how it will spend funding allocated to it by the Government in Control Period 6 (CP6, 2019-2024), through a new operational structure, to deliver the below objectives.</p> <p>Over CP6, Network Rail has a vision to be “a company that is on the side of passengers and freight users”, with the purpose to “connect people to places and goods, driving economic growth.” It frames its activities around six themes:</p> <ul style="list-style-type: none"> • safety; • efficiency; • sustainable growth; • people; 	No implications. Informative only.

	<ul style="list-style-type: none"> • train service delivery; and • customers and communities. <p>Each of these themes features individual targets related to the running of the rail network.</p>	
Inclusive Transport Strategy 2018	<p>The DfT's Inclusive Transport Strategy outlines the Government's plans to achieve equal access for disabled people across the transport network. The strategy details work already undertaken and sets out rights for disabled travellers going forwards, as well as efforts that will be made to raise awareness of issues surrounding physical access, access to information, and training for staff on the transport network.</p> <p>The primary ambition listed is for "disabled people to have the same access to transport as everyone else, and to be able to travel confidently, easily, and without extra cost." This is framed by the target to achieve equal access by 2030, with assistance where physical infrastructure remains a barrier.</p> <p>The strategy also puts forward various funding streams and updated to guidance with the intention of upgrading physical infrastructure across the country, and monitoring programmes to track delivery of the strategy.</p>	No implications. Informative only.
A connected society – A strategy for tackling loneliness, 2018	<p>This strategy notes the importance on local transport links and infrastructure in supporting social networks and facilitating interaction, key elements in combating loneliness.</p>	No implications. Informative only.

<p>Stern Review of the Economics of Climate Change (Stern, 2007)</p>	<p>The review examines the evidence on the economic impacts of climate change and explores the economics of stabilising greenhouse gases in the atmosphere. The second part of the review considers the complex policy challenges involved in managing the transition to a low-carbon economy and in ensuring that societies are able to adapt to the consequences of climate change.</p> <p>The document clearly identifies that adaptation is the only available response for impacts that will occur over the next few decades.</p>	<p>The AoS should consider the role of the new NPS in reducing carbon emissions but also adaptation of infrastructure.</p>
<p>Air Pollution: Action in a Changing Climate (Defra, 2010)</p>	<p>The key messages from this document are:</p> <ul style="list-style-type: none"> • There is a link between air pollution and climate change as these originate from similar activities, for example • transport and electricity generation. These links should be considered when managing policy. • The UK's commitment to build a low carbon economy by 2050 will reduce air pollution but choices made to achieve • this will impact upon the extent of air quality improvements. • Air quality/climate change co-benefits could be achieved by promoting actions such as low-carbon vehicles. • However, benefits for climate change may have negative impacts on air pollution and vice versa which need to be taken into consideration. <p>Action will be required at international, national, regional and local levels to ensure that policies regarding air pollution and climate change are aligned to maximise co-benefits</p>	<p>The AoS framework should consider including objectives which seek to limit air pollution and reduce the impacts of air pollution on climate change.</p>

Enterprise and Regulatory Reform Act 2013	<p>Given Royal Assent in April 2013, this legislation includes four heritage protection reforms aimed at improving efficiency without affecting protection. Some of them were promoted in the draft Heritage Protection Bill in 2008 that failed to enter Parliament through lack of time. They were also recommendations of the Penfold Review of non-planning consents.</p>	<p>The AoS should consider including objectives relating to the protection of the historic environment. It should also be assessed how new energy infrastructure would avoid adverse impacts on cultural heritage features and resources.</p>
Environmental Permitting (England and Wales) Regulations 2016	<p>The legislation provides regulatory framework for those operating, regulating or interested in facilities that are covered by the Environmental Permitting (England and Wales) Regulations 2016. This covers facilities previously regulated under the Pollution Prevention and Control Regulations 2007, and Waste Management Licensing and exemptions scheme (as superseded by the Environmental Permitting (England and Wales) Regulations 2007), some parts of the Water Resources Act 1991, the Radioactive Substances Act 1993 and the Groundwater Regulations 2009.</p> <p>Activities previously regulated under the PPC Regime will remain as Part A1, Part A2 or Part B, and will continue to be regulated by the Environment Agency (for Part A1 activities) or the local authority (for Part A2 and Part B activities).</p> <p>The aim of the regime is to:</p> <ul style="list-style-type: none"> • Protect the environment so that statutory and Government policy environmental targets and outcomes are achieved. • Deliver permitting and compliance with permits and certain environmental targets. 	<p>Water extraction for cooling and the associated discharges will require permitting at a site level. This will be considered at the EIA stage.</p> <p>The AoS should consider the protection of the environment and include appropriate objectives if necessary.</p>

	<ul style="list-style-type: none"> • Effectively and efficiently in a way that provides increased clarity and minimises the administrative burden on both the regulator and the operators. • Encourage regulators to promote best practice in the operation of facilities. • Continue to fully implement European legislation. 	
BIS Climate Change Adaptation Plan 2011	<p>BIS's Climate Change Adaptation Plan sets out how BIS will begin to address the challenges of the impacts of climate change. The report outlines five aims:</p> <ul style="list-style-type: none"> • Engaging with stakeholders in order to ensure the research on risks and opportunities of climate change is communicated as it becomes available. • Addressing initial priority actions to sectors such as retail and construction and resilience and promote adaptation to climate change along with low carbon technology and reducing emissions. • Encouraging green innovation. <p>Increasing the supply of Science, Technology, Engineering and Mathematics (STEM) skills at all levels and developing mechanisms for transferring them to new industrial contexts to ensure there are more people with the necessary environmental expertise</p>	The AoS should consider including objectives that would promote an improved resilience of energy infrastructure to climate change.
The Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018	<p>These Regulations amend the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.</p> <p>These new regulations set out the procedures to be followed in relation to environmental impact assessment linked to nationally significant infrastructure projects in England and Wales. The objective is to provide a high level of protection of the environment and to help integrate environmental considerations</p>	The AoS framework should consider including objectives to promote environmental impact reduction.

	into the preparation of proposals for development to reduce their impact on the environment.	
Enabling the Transition to a Green Economy: Government and business working together (HM Government, 2011)	<p>This report outlines the Government's vision for the future green economy where value and growth are maximized across the whole economy and natural assets are exploited sustainably. Moreover, the report sets out a range of commitments for developing the green economy, the main objectives of which include:</p> <ul style="list-style-type: none"> • Developing a green policy framework. • Promote the UK as a global leader in green exports and encourage green inward investment. • Provide accessible advice and support for businesses. • Ensure the skills system responds to the demand for skills. • Support the development of greener products, services, and technologies. • Encourage investment in infrastructure and ensure that infrastructure supports the green economy. • Build UK-based supply chains. • Procure products that meet cost-effective sustainability standards. • Help businesses understand the value of and their impact on the natural environment 	The AoS framework should consider including objectives that promote the development of resource efficiency. Objectives that encourage protection of the natural environment are also important. Note this report has been effectively replaced by the 'Ten Point Plan'.
Localism Act 2011	<p>The Act aims to shift power from central government to the hands of individuals, communities and councils.</p> <p>Moreover, the Act aims to push power downwards and outwards to the lowest possible level, including individuals, neighbourhoods, professionals and communities as well as local councils and other local institutions.</p>	The Act is of relevance to the planning process for nuclear power station development. Therefore, the AoS should seek to include objectives in alignment with the aims of the Act.

	<p>The Localism Act includes five key measures that underpin the Government's approach to decentralisation:</p> <ul style="list-style-type: none"> • Community rights: which ensure that community organisations have a fair chance to bid to take over land • and buildings that are important to them. • Neighbourhood planning: new rights will allow local communities to shape new development by coming • together to prepare neighbourhood plans. • Housing: councils will get a higher flexibility to manage their housing stock for meeting local demand. • General power of competence: local authorities will have the legal capacity to do anything an individual could do that isn't specifically prohibited. • Empowering cities and other local areas: public functions will be transferred to local authorities in order to improve local accountability or to promote economic growth. 	
Marine and Coastal Access Act 2009	<p>The Act introduces a new system of marine management. This includes a new marine planning system, which makes provision for a statement of the Government's general policies, and the general policies of each of the devolved administrations, for the marine environment, and also for marine plans which will set out in more detail what is to happen in the different parts of the areas to which they relate.</p> <p>Key areas of the Act include:</p> <ul style="list-style-type: none"> • Sets up a new Marine Management Organisation under which many of the existing, diverse areas of • marine regulation would be centralised • streamlines the existing marine licensing system and provides powers to create a joined-up marine planning policy 	<p>Many elements of energy infrastructure will likely be situated in coastal areas and the Act is therefore of relevance to the planning process. The AoS should establish objectives which align with the aims of the Act and protect the marine and coastal environment.</p>

	<ul style="list-style-type: none"> • introduces new measures to reform fisheries management • provides a framework for establishing marine conservation zones • enables the creation of a walkable route around the English and Welsh coast 	
UK Marine Policy Statement 2011	<p>The Marine Policy Statement (MPS) is the framework for preparing Marine Plans and taking decisions affecting the marine environment. The MPS will facilitate and support the formulation of Marine Plans, ensuring that marine resources are used in a sustainable way in line with the high level marine objectives and thereby:</p> <ul style="list-style-type: none"> • Promote sustainable economic development; • Enable the UK's move towards a low-carbon economy, in order to mitigate the causes of climate change and ocean acidification and adapt to their effects; • Ensure a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and our heritage assets; and • Contribute to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues. 	Major elements of energy infrastructure are located in coastal locations and the MPS has clear objectives in relation to coastal and marine areas. The AoS framework should consider sustainable use of the marine environment, in particular relating to water quality and use of the coastal zone.
Marine Strategy Regulations 2010	<p>The Marine Strategy Regulations 2010 establishes a framework for measures to achieve or maintain good environmental status (GES) in the marine environment by the year 2020. The Regulations transposed the requirements of the Marine Strategy Framework Directive (MSFD, 2008/56/EC). Annex I of the MSFD contains eleven qualitative descriptors for determining Good Environmental Status.</p> <p>1. Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.</p>	

2. Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.
3. Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.
4. All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.
5. Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.
6. Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.
7. Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems
8. Concentrations of contaminants are at levels not giving rise to pollution effects.
9. Contaminants in fish and other seafood for human consumption do not exceed levels established by legislation or other relevant standards.
10. Properties and quantities of marine litter do not cause harm to the coastal and marine environment.

	11.Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.	
Marine strategy part one: UK updated assessment and Good Environmental Status, 2019	This strategy provides an updated assessment of our seas and sets objectives, targets and indicators for achieving Good Environmental Status.	
Marine Strategy Part 2, 2021	This updated UK Marine Strategy Part Two sets out the monitoring programmes that we propose to use to provide the evidence to support the 2024 assessment of progress towards achieving GES within the UK Marine Strategy area.	
Marine strategy part three: UK programme of measures	This strategy outlines the measures that contribute towards Good Environmental Status (GES) in UK seas.	
Maritime Environment Mapping Programme	<p>The Maritime Environment Mapping Programme (MAREMAP) was launched in June 2010 to bring together Natural Environment Research Council (NERC) organisations with common geoscience objectives. It aims to integrate their research to inform practical applications such as marine planning, conservation and industry.</p> <p>MAREMAP is a joint initiative led by the British Geological Survey (BGS), the National Oceanography Centre (NOC) and the Scottish Association for Marine Science (SAMS) with partners from the University of Southampton, Channel Coastal Observatory, the University of Plymouth, the Maritime and Coastguard</p>	

	<p>Agency (MCA), the Centre for Environment, Fisheries & Aquaculture Science (CEFAS) and Marine Scotland.</p> <p>By bringing together the expertise and resources of these organisations, we will be able to update existing maps of our marine areas. Using an array of high-tech equipment and survey techniques available to our partners, we are able to identify and survey areas of strategic, economic or biological importance.</p> <p>Our data pool will inform responsible decisions about marine activities such as commercial fishing, renewable energy and raw material exploitation. By locating and mapping biologically vulnerable habitats, it will also accurately outline the areas that need to be protected from such activities.</p>	
The Planning Act 2008	<p>This legislation sets out how the planning system should deal with nationally significant infrastructure projects (NSIP). The legislation created a regime of National Policy Statements (NPS). These NPS give reasons for the policy set out in the statement, and must include an explanation of how the policy takes account of Government policy relating to the mitigation of, and adaptation to, climate change. They include the Government's objectives for the development of nationally significant infrastructure in a particular sector and state:</p> <ul style="list-style-type: none"> • How this will contribute to sustainable development. • How these objectives have been integrated with other Government policies. • How actual and projected capacity and demand have been taken into account. • Consider relevant issues in relation to safety or technology. • Circumstances where it would be particularly important to address the adverse impacts of development. • Specific locations, where appropriate, in order to provide a clear framework for investment and planning decisions. 	<p>The new NPS will set the policy framework for NSIPs as described by the Act. This AoS is being undertaken according the requirements of the Act</p>

Each NPS sets out Government policy for the infrastructure it covers and the reasons for that policy. This includes the need for new infrastructure; the relative weight to be given to specified criteria such as the benefits of new infrastructure and the adverse impacts that it might have; and, when action should be taken to mitigate adverse impacts. NPSs can set out criteria to be used in deciding whether a location is suitable for a type of infrastructure. They can also identify specific locations that are or might be suitable or unsuitable for a type of infrastructure.

- Setting out a clear Government policy in this way establishes clear Ministerial accountability for the policy choices that underlie planning decisions on nationally significant infrastructure schemes. It also:
- provides the primary basis for decisions by the Infrastructure Planning Commission on the applications it receives;
- reduces the need for discussion at public inquiries about what is or should be Government policy – avoiding a situation in which an attempt is made to determine what the national need is on a case by case basis; and
- gives prospective infrastructure providers clarity as to what proposals are or are not in line with Government policy.

The Act sets out the scale of development which should be considered a Nationally Significant Infrastructure Project, and therefore have to be determined through the Development Consent Order process.

This legislation introduced the independent Infrastructure Planning Commission (IPC), to take decisions on major infrastructure projects (transport, energy, water and waste). The Localism Act 2011 has, however, since abolished the Infrastructure Planning Commission and returned the powers for taking decisions on Airports infrastructure projects to the Secretary of State for Transport. This change means that NPSs which will be used to guide decisions by ministers, and can be voted on by the Parliament.

National Pollinator Strategy 2014-2024	<p>It is recognised that Pollinators face many pressures which have led to declines in numbers, and a reduction in the diversity of species to be found in many parts of the country.</p> <p>As a response, DEFRA developed the National Pollinator Strategy, which over the years 2014-2024 aims to build a solid foundation to bring about the best possible conditions for bees and other insects to flourish. This will fulfil the vision of the Strategy which is to see pollinators thrive so that they can carry out their essential service to people of pollinating flowers and crops, while providing other benefits for native plants, the wider environment, food production and all of us.</p>	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.
The Floods and Water (Amendment etc.) (EU Exit) Regulations 2019	The Regulations ensure that the existing floods and water regime will continue to operate effectively following the UK's exit from the European Union.	Ensure an objective covering flooding is considered within the AoS framework.
Industrial Decarbonisation Strategy 2021	<p>The aim of this strategy is to show how the UK can have a thriving industrial sector aligned with the net zero target, without pushing emissions and business abroad, and how government will act to support this. This strategy is part of a series of publications from government, which combined show how the net zero transition will take place across the whole UK economy.</p> <p>The strategy aims to:</p> <ul style="list-style-type: none"> • show how the UK can have a thriving industrial sector aligned with the net zero target, without pushing emissions and business abroad • show how and when government will act to support this, while sharing the costs and risks fairly between industry, its customers and the taxpayer 	The AoS should consider including objectives that address the reduction of carbon emissions, as well as objectives that promote the transformation to a low carbon industrial sector.

	<ul style="list-style-type: none"> start a conversation with industry, its workforce, customers and communities about the future of industry in a net zero world. 	
UK Marine Strategy	<p>The UK Marine Strategy provides the framework for delivering marine policy at the UK level and sets out how we will achieve the vision of clean, healthy, safe, productive and biologically diverse oceans and seas.</p> <p>The UK Marine Strategy consists of a simple 3-stage framework for achieving good environmental status (GES) in our seas. Achieving GES is about protecting the marine environment, preventing its deterioration and restoring it where practical, while allowing sustainable use of marine resources. The strategy covers 11 elements (known as descriptors) including: biodiversity; non-indigenous species; commercial fish; food webs; eutrophication; sea-floor integrity; hydrographical conditions; contaminants; contaminants in seafood; marine litter and underwater noise.</p> <p>Part 1 of the Marine Strategy was updated in 2019, marking the beginning of the second implementation cycle of the UK Marine Strategy.</p>	Ensure protection of our marine environment is considered as an Objective within the AoS.
Environmental Assessment of Plans and Programmes Regulations 2004	To comply with the Environmental Assessment of Plans and Programmes Regulations 2004, if it is determined that a proposed plan or programme, or a modification to an existing plan or programme, is likely to have a significant environmental effect it will need a Strategic Environment Assessment (SEA).	SEA is an integral part of the NPS AoS
Planning Practice Guidance – Natural Environment 2019	<p>Explains key issues in implementing policy to protect and enhance the natural environment, including local requirements covering:</p> <p>Agricultural land, soil and brownfield land of environmental value</p>	To consider as part of identification of issues and opportunities for the NPS

	<p>A local planning authority must consult Natural England before granting planning permission for large-scale non-agricultural development on best and most versatile land that is not in accord with the development plan. Natural England has published guidance on development on agricultural land.</p> <p>Defra has published a Code of practice for the sustainable use of soils on construction sites which may be helpful when setting planning conditions for development sites. It provides advice on the use and protection of soil in construction projects, including the movement and management of soil resources.</p> <p>Defra has published information on Open Mosaic Habitats, a type of priority habitat that is of high ecological value which occurs on brownfield land. Natural England's Open Mosaic Habitat Inventory can be used as the starting point for detailed assessments.</p> <p>Green infrastructure</p> <p>Strategic policies can identify the location of existing and proposed green infrastructure networks and set out appropriate policies for their protection and enhancement. To inform these, and support their implementation, green infrastructure frameworks or strategies prepared at a district-wide scale (or wider) can be a useful tool. These need to be evidence-based and include assessments of the quality of current green infrastructure and any gaps in provision. Existing national and local strategies – for example on tree and woodland provision – can inform the approach to green infrastructure; and standards such as the Accessible Natural Greenspace Standard can be applied when assessing provision.</p> <p>Green infrastructure opportunities and requirements need to be considered at the earliest stages of development proposals, as an integral part of development and</p>	
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infrastructure provision, and taking into account existing natural assets and the most suitable locations and types of new provision.

Green infrastructure will require sustainable management and maintenance if it is to provide benefits and services in the long term. Arrangements for funding need to be identified as early as possible, and factored into the design and implementation, balancing the costs with the benefits. Local community engagement can assist with management and tailoring provision to local needs.

Biodiversity, geodiversity and ecosystems

Development plans and planning decisions have the potential to affect biodiversity or geodiversity outside as well as inside relevant designated areas.

Planning authorities and neighbourhood planning bodies can work collaboratively with other partners, including Local Nature Partnerships, to develop and deliver a strategic approach to protecting and improving the natural environment based on local priorities and evidence. Equally, they need to consider the opportunities that individual development proposals may provide to conserve and enhance biodiversity and geodiversity, and contribute to habitat connectivity in the wider area (including as part of the Nature Recovery Network).

As set out in the Government's 25 Year Environment Plan, the Nature Recovery Network is an expanding and increasingly-connected network of wildlife-rich habitat across England. It comprises a core network of designated sites of importance for biodiversity and adjoining areas that function as stepping stones or wildlife corridors, areas identified for new habitat creation and up to 25 nature recovery areas for targeted action. Defra, Natural England and other government bodies are working with national and local partnerships to deliver the Network,

which includes support for developing maps and advice to show where actions to improve and restore habitats would be most effective.

Local ecological networks can make a significant contribution to developing the Nature Recovery Network.

Guidance on ecosystems services (the benefits people obtain from ecosystems, such as food, water, flood and disease control and recreation) and using an ecosystems approach is available. This guidance can, where appropriate, inform plan-making and decision-making on planning applications.

Information on biodiversity and geodiversity impacts and opportunities needs to inform all stages of development (including site selection and design, pre-application consultation and the application itself). An ecological survey will be necessary in advance of a planning application if the type and location of development could have a significant impact on biodiversity and existing information is lacking or inadequate. Pre-application discussions can help to scope whether this is the case and, if so, the survey work required.

Plans, and particularly those containing strategic policies, can be used to set out a suitable approach to both biodiversity and wider environmental net gain, how it will be achieved, and which areas present the best opportunities to deliver gains. Such areas could include those identified in: natural capital plans; local biodiversity opportunity or ecological network maps; local green infrastructure strategies; strategic flood risk assessments; water cycle studies; air quality management plans; river basin management plans; and strategic protected species licensing areas. Consideration may also be given to local sites including where communities could benefit from improved access to nature.

	<p>Landscape</p> <p>The National Planning Policy Framework is clear that plans should recognise the intrinsic character and beauty of the countryside, and that strategic policies should provide for the conservation and enhancement of landscapes. This can include nationally and locally-designated landscapes but also the wider countryside.</p> <p>Where landscapes have a particular local value, it is important for policies to identify their special characteristics and be supported by proportionate evidence. Policies may set out criteria against which proposals for development affecting these areas will be assessed. Plans can also include policies to avoid adverse impacts on landscapes and to set out necessary mitigation measures, such as appropriate design principles and visual screening, where necessary. The cumulative impacts of development on the landscape need to be considered carefully.</p>	
Independent Assessment of UK Climate Change Risk, Committee on Climate Change 2021	<p>The Advice Report provides the Adaptation Committee's statutory advice to Governments on priorities for the forthcoming national adaptation plans and wider action. It is informed by extensive new evidence gathered for the accompanying Climate Change Risk Assessment (CCRA3) Technical Report. More than 60 risks and opportunities have been identified, fundamental to every aspect of life in the UK covering our natural environment, our health, our homes, the infrastructure on which we rely, and the economy.</p> <p>Alarmingly, this new evidence shows that the gap between the level of risk we face and the level of adaptation underway has widened. Adaptation action has failed to keep pace with the worsening reality of climate risk.</p>	The AoS needs to consider the relevant areas of climate change risk.

	<p>The Committee identifies eight risk areas that require the most urgent attention in the next two years. They have been selected on the basis of the urgency of additional action, the gap in UK adaptation planning, the opportunity to integrate adaptation into forthcoming policy commitments and the need to avoid locking in poor planning, especially as we recover from the COVID-19 pandemic.</p> <p>The 8 areas of risk are:</p> <ul style="list-style-type: none"> - Risks to the viability and diversity of terrestrial and freshwater habitats and species from multiple hazards - Risks to soil health from increased flooding and drought - Risks to natural carbon stores and sequestration from multiple hazards leading to increased emissions - Risks to crops, livestock and commercial trees from multiple hazards - Risks to supply of food, goods and vital services due to climate-related collapse of supply chains and distribution networks - Risks to people and the economy from climate-related failure of the power system - Risks to human health, wellbeing and productivity from increased exposure to heat in homes and other buildings - Multiple risks to the UK from climate change impacts overseas <p>Ten principles for good adaptation planning that should form the basis for the next round of national adaptation plans are also recommended. These are intended to bring adaptation into mainstream consideration by government* and business</p>	
Environment Act 2021	The Environment Act sets out that the Secretary of State may by regulations set long-term targets in respect of any matter which relates to (a)the natural environment, or (b)people's enjoyment of the natural environment. A long-term	The AoS needs to consider this far-reaching piece of legislation which although not

	<p>target in respect of at least one matter within each of the four priority areas: (a)air quality; (b)water; (c)biodiversity; (d)resource efficiency and waste reduction.</p> <p>The Act specifically requires the Secretary of State to set by future regulation statutory targets for the recovery of the natural world in two priority areas: air quality (PM2.5 air quality target) and biodiversity (species abundance target) and includes an important new target to reverse the decline in species abundance by the end of 2030. The Secretary of State must also prepare an environmental improvement plan for significantly improving the natural environment for a period no shorter than 15 years.</p> <p>Key relevant provisions:</p> <ul style="list-style-type: none"> • Biodiversity Net Gain <p>The Act places a statutory requirement for developments to deliver biodiversity improvements and will require all planning permissions in England (subject to exemptions) to be granted subject to a new general pre-commencement condition that requires approval of a biodiversity gain plan.</p> <p>The planning authority can only approve the biodiversity gain plan if the biodiversity value attributable to a development exceeds the pre-development biodiversity value of the onsite habitat by 10% (known as the 'biodiversity gain objective').</p> <p>The biodiversity plan must set out the steps taken to achieve the 'biodiversity gain objective', which could be through minimising the adverse effects of the development on habitats, the identification of the pre and post development onsite biodiversity value, details of registered offsite biodiversity value allocated to the</p>	<p>addressing carbon emissions specifically (this is done by the recent Net Zero Strategy) it provides an important framework for net zero pathways in terms of four priority areas: air quality, water, biodiversity and resource efficiency and waste.</p>
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development and biodiversity credits purchased, and any other information that may be required by regulations.

There will be flexible mechanisms available to increase the biodiversity value to demonstrate a 10% biodiversity net gain. Works to enhance habitats can be carried out either onsite or offsite or through the purchase of 'biodiversity credits' from the Secretary of State. However, this flexibility may be removed (subject to regulations) if the onsite habitat is 'irreplaceable'. For such developments, arrangements to minimise their adverse effects and improvements, must be delivered onsite.

Both onsite and offsite enhancements must be maintained for at least 30 years after completion of a development (which period may be amended).

Onsite enhancements must be secured by planning condition, s106 obligation or a conservation covenant, which is a written agreement that is registrable as a local land charge, between a landowner and a 'responsible body' that binds a landowner and its successors to do/not do something on the land for a conservation purpose.

Offsite enhancements must be secured under either a s106 agreement or a conservation covenant and be registered in the new, publicly available, biodiversity gain site register.

- Waste and resource efficiency

The Act gives wide ranging powers to make regulations about who producer obligations should apply to and which products or materials should be covered. These powers are intended to prevent waste/reduce thout of a product that

becomes waste and increase re-use, redistribution, recovery and recycling. Producers can get ahead of these regulations, and minimise any eventual requirements to pay disposal costs, by designing products with these objectives in mind.

The Environment Act 2021 places a duty on Ministers of the Crown to have due regard to the environmental principles policy statement. The policy statement sets out how policymakers should apply environmental principles to support environmental protection and enhancement. The final version of the strategic policy statement was laid in Parliament on 31 January 2023. The duty will commence on 1 November 2023.

The 5 principles in this policy statement are internationally recognised as successful benchmarks for environmental protection and enhancement. When making policy, and where relevant, ministers will need to consider the:

- Integration principle: look at opportunities to embed environmental protection and/or enhancement
- Prevention principle: prevent environmental harm before it occurs or contain existing damage
- Rectification at source principle: environmental damage should be addressed at its origin to avoid the need to remedy its effects later
- Polluter pays principle: the costs of pollution should be borne by those causing it
- Precautionary principle: where there are threats of serious or irreversible environmental damage, a lack of full scientific certainty shall not be used

as a reason for postponing cost-effective measures to prevent environmental degradation

The purpose of these principles is to guide ministers and policymakers towards opportunities to prevent environmental damage and enhance the environment. However, the principles are not rules and they cannot dictate policy decisions by ministers. Policymakers should consider and use the principles iteratively from the outset and during subsequent stages in policy development. They should identify the potential environmental effects (positive or negative) and use the principles to inform and influence the design of the policy. The 5 principles play an important role to support Environmental Improvement Plans and to delivering on our net zero commitment to tackle climate change.

The integration principle is overarching, and simply requires that policymakers should look for opportunities to embed environmental protection into policy. Not all environmental principles are of the same nature or function; they serve different purposes and will focus the policy in different ways. Some of the environmental principles will be appropriate for all relevant policy areas. Other principles will only be relevant in circumstances where there are specific factors for their use. In order for the principles to be most cost-effective and lead to better environmental outcomes, it is preferable for environmental damage to be prevented under the prevention principle. When environmental damage is already occurring, policymakers should consider the timeliness and urgency of policy interventions intended to achieve environmental protection. If it is to be addressed after it has occurred, then the rectification at source and polluter pays principles should be considered to reduce, mitigate or disincentivise damage.

This order of consideration is not fixed and may be adjusted if a different order more appropriately addresses a policy's environmental effects. Where a significant

adverse effect is likely as a result of a policy, it may be necessary to consider all principles in determining the best policy.

Many actions can be taken based on applying the principles, either alone or in combination with others. Possible actions that could be taken as a result of having considered the principles may include:

- Amending policy options or including an additional policy option in the initial design of a policy, which reflects consideration of the environmental principles. In some cases, considering a principle may introduce a new option as a different solution to the policy problem. For example, one where the polluter may pay. This option would then be subject to the same policy evaluation as the existing options.
- Reframing the policy to accommodate the principles. In some cases, the policy design may need to be amended to ensure that a specific principle is applied. This could include the framing of the problem, the detail of how the policy option may work, or how it may be implemented.
- Embedding a principle in law or guidance. If policymakers want the principles to be used in decision-making or the implementation of a policy, this approach may be appropriate. This could be relevant where proposed legislation might include associated powers, duties or obligations that may have a significant effect on the environment.
- Postponing a policy until further evidence is gained. If a policymaker is unsure on whether action is appropriate, they should gather further evidence. Applying the precautionary principle may encourage policymakers to explore the potential environmental damage before

	moving forwards. Or, where the risk is serious, they may amend, postpone or discontinue the policy in rare cases.	
Align with Environmental Improvement Plan 2023 goals	<p>This document represents the first such review of the 25YEP published in 2018. It reinforces the intent of the 25YEP. Where the 25YEP set out the framework and vision, this document sets out the plan to deliver.</p> <p>The apex goal is improving nature and halting the decline in biodiversity.</p> <p>This is a large task but we have already started: we have created or restored wildlife habitats the size of Dorset, we are investing more than £750 million in tree-planting and peatland restoration through our Nature for Climate Fund, and we have established a network of marine protected areas across 35,000 square miles of English waters.</p> <p>We have also driven action on the global stage, reflecting that restoring nature is not just a national endeavour but also international: at UN Nature Summit COP15, we agreed a new Global Biodiversity Framework, with 23 global targets, including 30% of global land and 30% of global ocean to be protected by 2030. And our goals and targets at home will support progress towards the UN's Sustainable Development Goals internationally.</p> <p>To make further progress, we will:</p> <ul style="list-style-type: none"> - launch the Species Survival Fund to create, enhance and restore habitats - create, restore, and extend around 70 areas for wildlife through projects including new National Nature Reserves, and the next rounds of the Landscape Recovery Projects 	The AoS must recognise that the apex goal is improving nature and halting decline in biodiversity.

	<ul style="list-style-type: none"> - protect 30% of our land and sea for nature through the Nature Recovery Network and enhanced protections for our marine protected areas. We intend to designate the first Highly Protected Marine Areas this year - implement the Environment Act 2021, including rolling out Local Nature Recovery Strategies to identify areas to create and restore habitat, and Biodiversity Net Gain to enhance the built environment - support a transformation in the management of 70% of our countryside by incentivising farmers to adopt nature friendly farming practices - publish an updated Green Finance Strategy, setting out the steps we are putting in place to leverage in private finance to deliver against these goals. We have a goal to raise at least £500 million per year of private finance into nature's recovery by 2027 and more than £1 billion by 2030 <p>This goal is at the apex of our plan: all the other goals will help us to achieve it.</p>	
UK Net Zero Strategy 2021	<p>The UK's new Net Zero Strategy sets out policies and proposals for decarbonising all sectors of the UK economy to meet our net zero target by 2050. It sets out, for the first time, how the UK Government plans to deliver its emissions targets of Net Zero in 2050 and a 78% reduction from 1990 to 2035 (-63% relative to 2019). It puts forward an achievable and affordable vision that will bring net benefits to the UK.</p> <p>Government sets out that the exact technology and energy mix in 2050 cannot be known now, and the path to net zero will respond to the innovation and adoption of new technologies over time. It is expected to rely on the following key green</p>	The AoS must be guided by this important overarching strategy.

	<p>technologies and energy carriers, which interact to meet demand across sectors and to remain low carbon:</p> <ul style="list-style-type: none"> • Electricity from low carbon generation and storage technologies meets higher demand for low carbon power in buildings, industry, transport, and agriculture; • Hydrogen can complement the electricity system, especially in harder to electrify areas like parts of industry and heating, and in heavier transport such as aviation and shipping. A range of low carbon production methods could be used; • Carbon capture usage and storage (CCUS) can capture CO₂ from power generation, hydrogen production, and industrial processes – storing it underground or using it. This technology also supports negative emissions from engineered greenhouse gas removals – bioenergy with carbon capture and storage (BECCS) and Direct Air Carbon Capture and Storage (DACCS); and • Biomass combined with CCUS can remove carbon from the atmosphere and support low carbon electricity and hydrogen generation. Biomass and other wastes can also support low carbon fuels for industry, buildings, and transport. <p>It is an ambitious and comprehensive strategy that marks a significant step forward for UK climate policy, setting a globally leading benchmark. Further steps will need to follow quickly to implement the policies and proposals mapped out in the Net Zero Strategy if it is to be a success.</p>	
The Growth Plan 2022	<p>The Growth Plan sets out action to unlock private investment across the whole of the UK, make it quicker to deliver the UK's critical infrastructure, make work pay, and support people to get onto the property ladder. New Investment Zones will</p>	<p>The AoS must be guided by this important overarching strategy.</p>

	<p>provide time-limited tax reliefs, and planning liberalisation to support employment, investment, and home ownership.</p> <p>The Growth Plan makes good the government's commitment to cut taxes for people and businesses. The government will cut National Insurance contributions from November and cancel the Health and Social Care Levy and next year's planned rise in Corporation Tax, keeping it at a competitive rate of 19%.</p>	
British Energy Security Strategy	<p>The 'British energy security strategy' builds on the Prime Minister's 'Ten point plan for a green industrial revolution', and the 'Net zero strategy'.</p> <p>This plan comes in light of rising global energy prices, provoked by surging demand after the pandemic as well as Russia's invasion of Ukraine. This will be central to weaning Britain off expensive fossil fuels, which are subject to volatile gas prices set by international markets we are unable to control, and boosting our diverse sources of homegrown energy for greater energy security in the long-term.</p>	The AoS must be guided by this important overarching strategy.

Table 3 - Key Plans, Policies and Legislation – Regional (England, Wales, Northern Ireland & Scotland)

Plan, Policy or Legislation	Key Objectives / Targets / Guidance	Implications for the AoS
<i>England</i>		

<p>25 Year Environment Plan, 2018</p>	<p>The Government's 25-Year Environment Plan sets out the Government's position on environmental improvements, focussed on delivering cleaner air and water across the country, protecting at-risk wildlife, and improving natural habitats.</p> <p>The plan sets the following key actions:</p> <ul style="list-style-type: none"> - Using and managing land sustainably, including embedding an "environmental net gain" principle into development. - Recovering nature and enhancing the beauty of landscapes. - Connecting people to the environment to improve health and wellbeing. - Increase resource efficiency and reducing pollution. - Securing clean, healthy and productive and biologically diverse seas and oceans. - Protecting and improving the global environment. <p>The following targets are set out in the 25 Year Plan:</p> <p>Clean air:</p> <ul style="list-style-type: none"> - meeting legally binding targets to reduce emissions of five damaging air pollutants; this should halve the effects of air pollution on health by 2030 - maintaining the continuous improvement in industrial emissions by building on existing good practice and the successful regulatory framework <p>Clean and plentiful water:</p> <ul style="list-style-type: none"> - clean and plentiful water by improving at least three quarters of our waters to be close to their natural state as soon as is practicable by: <ul style="list-style-type: none"> • reducing the damaging abstraction of water from rivers and groundwater, ensuring that by 2021 the proportion of water bodies with enough water to support environmental standards increases from 82% to 90% for surface water bodies and from 72% to 77% for groundwater bodies 	<p>The AoS will need to consider implications of key actions and key targets.</p> <p>The AoS will need to consider implications for soil health</p>
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- reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water as per our River Basin Management Plans

Thriving plants and wildlife:

- At sea: reversing the loss of marine biodiversity and, where practicable, restoring it; increasing the proportion of protected and well-managed seas, and better managing existing protected sites; making sure populations of key species are sustainable with appropriate age structures; ensuring seafloor habitats are productive and sufficiently extensive to support healthy, sustainable ecosystems
- On land and in freshwaters: restoring 75% of our one million hectares of terrestrial and freshwater protected sites to favourable condition, securing their wildlife value for the long term; creating or restoring 500,000 hectares of wildlife-rich habitat outside the protected site network, focusing on priority habitats as part of a wider set of land management changes providing extensive benefits; taking action to recover threatened, iconic or economically important species of animals, plants and fungi, and where possible to prevent human induced extinction or loss of known threatened species in England and the Overseas Territories; increasing woodland in England in line with our aspiration of 12% cover by 2060: this would involve planting 180,000 hectares by end of 2042

Reducing the risks of harm from environmental hazards:

- Reduce the risk of harm to people, the environment and the economy from natural hazards including flooding, drought and coastal erosion by:
 - making sure everyone is able to access the information they need to assess any risks to their lives and livelihoods, health and prosperity posed by flooding and coastal erosion
 - bringing the public, private and third sectors together to work with communities and individuals to reduce the risk of harm
 - making sure that decisions on land use, including development, reflect the level of current and future flood risk

	<ul style="list-style-type: none"> • ensuring interruptions to water supplies are minimised during prolonged dry weather and drought • boosting the long-term resilience of our homes, businesses and infrastructure <p>Using resources from nature more sustainably and efficiently:</p> <ul style="list-style-type: none"> - ensure that resources from nature, such as food, fish and timber, are used more sustainably and efficiently. We will do this by: <ul style="list-style-type: none"> • maximising the value and benefits we get from our resources, doubling resource productivity by 2050 • improving our approach to soil management: by 2030 we want all of England's soils to be managed sustainably, and we will use natural capital thinking to develop appropriate soil metrics and management approaches • increasing timber supplies • ensuring that all fish stocks are recovered to and maintained at levels that can produce their maximum sustainable yield • ensuring that food is produced sustainably and profitably <p>Enhancing beauty, heritage and engagement with the natural environment:</p> <ul style="list-style-type: none"> - Conserve and enhance the beauty of our natural environment, and make sure it can be enjoyed, used by and cared for by everyone. We will do this by: <ul style="list-style-type: none"> • safeguarding and enhancing the beauty of our natural scenery and improving its environmental value while being sensitive to considerations of its heritage. • making sure that there are high quality, accessible, natural spaces close to where people live and work, particularly in urban areas, and encouraging more people to spend time in them to benefit their health and wellbeing • focusing on increasing action to improve the environment from all sectors of society 	
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Mitigating and adapting to climate change:

- Take all possible action to mitigate climate change, while adapting to reduce its impact. We will do this by:
 - continuing to cut greenhouse gas emissions including from land use, land use change, the agriculture and waste sectors and the use of fluorinated gases
 - making sure that all policies, programmes and investment decisions take into account the possible extent of climate change this century
 - implementing a sustainable and effective second National Adaptation Programme

Minimising waste:

- Minimise waste, reuse materials as much as we can and manage materials at the end of their life to minimise the impact on the environment. We will do this by:
 - working towards our ambition of zero avoidable waste by 2050
 - working to a target of eliminating avoidable plastic waste by end of 2042
 - meeting all existing waste targets – including those on landfill, reuse and recycling – and developing ambitious new future targets and milestones
 - significantly reducing and where possible preventing all kinds of marine plastic pollution – in particular material that came originally from land

The Plan introduces and references a number of external targets. Importantly it notes that 40% of the UK's final energy consumption is the responsibility of the transport sector. The plan includes:

- meeting legally binding targets to reduce emissions of five damaging air pollutants (intended to halve the effects of air pollution on health by 2030);

	<ul style="list-style-type: none"> • ending the sale of new conventional petrol and diesel cars and vans by 2040; • continuing to cut greenhouse gas emissions including from land use, land use change, the agriculture and waste sectors and the use of fluorinated gases; and • making sure that all policies, programmes and investment decisions take into account the possible extent of climate change this century. <p>The 25 Year Environment Plan has a specific soil health target of ‘improving our approach to soil management: by 2030 we want all of England’s soils to be managed sustainably, and we will use natural capital thinking to develop appropriate soil metrics and management approaches’. There are other actions in the Plan which will need to recognise the synergies and dependencies on soil health such as use of natural flood management solutions, SUDS, climate change mitigation and adaptation, though these do not always recognise the key role of healthy soils in the successful achievement of these aims.</p> <p>Similarly, the aim that development is in the right places, avoiding our best agricultural land and in embedding the ‘environmental net gain’ principle reflects a natural capital approach in spatial planning which aims to minimise the impact of development on finite land and soil resources.</p>	
Introduction to the Green Infrastructure Framework - Principles and Standards for	<p>Good quality Green Infrastructure (GI) has an important role to play in our urban and rural environments for improving health and wellbeing, air quality, nature recovery and resilience to and mitigation of climate change, along with addressing issues of social inequality and environmental decline.</p> <p>The Green Infrastructure Framework is a commitment in the Government’s 25 Year Environment Plan. It supports the greening of our towns and cities and</p>	AoS should promote the important role of good quality Green Infrastructure

<p>England, Natural England 2021</p>	<p>connections with the surrounding landscape. Networks of green and blue spaces and other natural features can bring big benefits for nature and climate, health and prosperity. At present access to green and blue spaces varies considerably across the country, and there are opportunities for these important assets to be better managed for the environment and to deliver a wider range of multifunctional benefits.</p> <p>The GI Framework will help local planning authorities and developers meet requirements in the National Planning Policy Framework to consider GI in local plans and in new development. It can support better planning for good quality GI, and help to target the creation or improvement of GI, particularly where existing provision is poorest.</p> <p>Note: Green Infrastructure Standards being developed as part of the 25 YEP - the Framework of Green Infrastructure Standards will be launched in 2022. The GIST framework will set out a menu of standards around the how and why to do good green infrastructure, as well as for the quantity, quality and functionality of green infrastructure. There will be guidance on How to design – an evidence-based GI design guide linked to the National Model Design Code.</p>	
<p>Natural England's climate change risk assessment and adaptation plan (2021) (<i>published 2022</i>)</p>	<p>The report outlines the following themes in developing response to the biodiversity and climate crises in an integrated way:</p> <ul style="list-style-type: none"> • planning climate change adaptation with the aim of restoring ecological process at a landscape scale as part of nature recovery to enhance resilience and accommodate inevitable change. • working on adaptation can deliver multiple benefits, including integrating climate change mitigation, biodiversity and enhancing the quality of life for people. 	<p>AoS should consider risks and opportunities to biodiversity of climate change adaptation</p>

<p>Climate change adaptation reporting: third round</p>	<ul style="list-style-type: none"> • recognising the benefits of local level adaptation and delivering adaptation in a place-based way. • using a natural capital and ecosystem approach to account for the multiple benefits that nature provides to society • developing adaptive management that takes account of change in the natural world both in the policy advice and delivery space. • ensuring different work programmes have a joined-up approach to adaptation. • developing the evidence base to support practical adaptation, including monitoring and evaluation of adaptation actions. • developing a joined-up approach to Nature-based Solutions which deliver mitigation and adaptation with measurable benefits for nature and people. <p>Key overarching risks and opportunities:</p> <ol style="list-style-type: none"> 1. Risks to the viability of the Nature Recovery Network and the recovery of threatened species and habitats 2. Risks to the status of protected sites for biodiversity and geodiversity 3. Risks to the ability of the SSSI network, Marine Protected Area (MPAs), NNRs and protected landscapes to adapt to climate change. 4. Risks to natural capital and its contribution to agriculture, fisheries and sustainable development including farm advice and net gain. 5. Risks to the viability of natural areas for people to access and connect with nature. 6. Risks and Opportunities for different species and habitats under changing climatic conditions. 7. Opportunities for landscape scale measures to tackle climate change that enhance the natural environment. 8. Opportunities for nature recovery and nature-based solutions to help nature and society adapt to climate change. 9. Opportunities for nature-based solutions to provide additional space for 	
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	people to connect with nature and cope with climate change.	
UK Climate Change Risk Assessment 2022, Presented to Parliament pursuant to Section 56 of the Climate Change Act 2008	<p>The UK government is required to undertake an assessment of the risks from climate change faced by the UK every five years under the Climate Change Act 2008. The third UK Climate Change Risk Assessment (CCRA3) identifies sixty-one UK-wide climate risks and opportunities that cross-cut multiple sectors of the economy. The potential impact of these risks includes changes to health and productivity, and disruption to households, businesses and public services. Estimated damages caused by climate change could be at least 1% of GDP by 2045 and the report highlights that more action is needed in the majority of risk areas to increase resilience and reduce the costs associated with climate change. Decision making, such as for new housing or infrastructure, should consider the effects of climate change to avoid the need for costly remedial actions later and this should include low probability, high impact events, and interdependent or cascading risks</p>	Ensure that assessment of risks and opportunities from climate change is addressed within the AoS Framework.
The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting 2023, Presented to Parliament pursuant to Section 58 of the Climate Change Act 2008	<p>NAP3</p> <p>Every 5 years, the government produces an assessment of the risks and opportunities from climate change and reports on how we will adapt in the NAP. This approach to climate adaptation is world leading, placing the UK at the forefront of global efforts to manage climate risk.</p> <p>NAP3 explains the government's plans to adapt to climate change over the next 5 years from 2023 to 2028, including: protecting the natural environment; supporting business in adapting to climate change; adapting infrastructure (for example, our electricity networks and railways); protecting buildings and their surroundings (for example, from hotter temperatures); protecting public health and communities;</p>	The AoS should consider how nuclear infrastructure planning aligns with short term plans by UK Government.

mitigating international impacts on the UK (for example, on food supplies imported from abroad).

The Climate Change Act and the Climate Change (Scotland) Act require Northern Ireland, Wales, and Scotland to have their own plans for climate adaptation. These plans are closely aligned, and Northern Ireland, Wales, and Scotland have contributed to NAP3.

Climate Adaptation Reporting

The government's strategy for the fourth round of climate adaptation reporting under the Adaptation Reporting Power (ARP). ARP was introduced under the CCA 2008. It gives the Secretary of State the power to direct organisations with functions of a public nature and statutory undertakers to produce reports detailing:

- the current and future projected impacts of climate change on their organisation
- proposals for adapting to climate change
- an assessment of progress towards implementing the policies and proposals set out in previous reports

Reporting is usually undertaken in a 5-yearly cycle. Following strong support for the proposals in our consultation, the fourth round of reporting will be undertaken to a different timescale than previous rounds. This will improve the alignment of adaptation reporting with other elements of the statutory framework for climate change adaptation. The closing date for the next round will therefore be brought forward to late 2024 (from 2026). After this, reporting will return to its 5-yearly cycle.

<p>Nature Networks Evidence Handbook (NERR081) Natural England 2020</p>	<p>The handbook aims to help the designers of nature networks by identifying the principles of network design and describing the evidence that underpins the desirable features of nature networks. It builds on the Making Space for Nature report of Lawton et al. 2010), outlining some of the practical aspects of implementing a nature network plan, as well as describing the tools that are available to help in decision making.</p> <p>To make a nature network, in contrast to an ecological network, we need to involve people from the earliest stages in planning and design, to create an overarching vision for the network, taking into account their needs and the services that a landscape provides to society.</p> <p>When developing a more detailed plan for a nature network, it is important to consider the constraints and opportunities provided by the landscape, geology and ecosystems within the landscape, and the need to build resilience to climate change.</p> <p>A suite of ecological rules of thumb to aid practitioners are provided, including a hierarchy of priority actions: (a) improve core wildlife sites; (b) increase the size of core sites; (c) increase the number of core sites; (d) improve the 'permeability' of the surrounding landscape for the movement of wildlife; and (e) create corridors of connecting habitat. In addition, there is a need to develop a number of Large Nature Areas (c. 5-12,000 ha) within a country that will provide centres from which wildlife will brim over into the countryside.</p>	<p>The AoS will need to consider the implementation of nature networks.</p>
<p>The Environmental Benefits from Nature Tool - Beta Test</p>	<p>The Environmental Benefits from Nature tool is designed to work alongside Biodiversity metric 3.0 and provide developers, planners and other interested parties with a means of enabling wider benefits for people and nature from</p>	<p>The AoS should advocate the use of this tool.</p>

<p>Version, Natural England 2021</p>	<p>biodiversity net gain. The tool uses a habitat-based approach to provide a common and consistent means of considering the direct impact of land use change across 18 ecosystem service services.</p> <p>It has been developed by Natural England and the University of Oxford in partnership with Defra, the Forestry Commission and the Environment Agency to support Government's 25 Year Environment Plan commitment to expand net gain approaches to include wider Natural Capital benefits such as flood protection, recreation and improved water and air quality.</p>	
<p>The Biodiversity Metric 3.0, Natural England 2021</p>	<p>Biodiversity Metric 3.0 can be used or specified by any development project, consenting body or landowner that needs to calculate biodiversity losses and gains for terrestrial and/or intertidal habitats. It will be this metric that underpins the Environment Bill's provisions for mandatory biodiversity net gain in England, subject to any necessary adjustments for application to major infrastructure projects.</p> <p>Biodiversity Metric 3.0 has been extensively tested. However, we will continue to listen to feedback and will aim to address any errors or problems identified in the materials or function before the Environment Bill's mandatory biodiversity net gain provisions take effect for Town and Country Planning Act development (following a two year transition period, estimated to be in late 2023).</p> <p>The metric includes both intertidal and terrestrial habitats. Work is underway to develop an approach to marine net gain for English waters. Defra is currently working towards a consultation on the principles for marine net gain by the end of the year. We will update the metric to allow for a better integration of intertidal and sub-tidal habitats as marine net gain evolves.</p>	<p>The AoS should advocate the use of this tool</p>

<p>Nature Recovery Network, Defra and Natural England 2020</p>	<p>The Nature Recovery Network (NRN) is a major commitment in the government's 25 Year Environment Plan. By bringing together partners, legislation and funding, we can restore and enhance the natural environment.</p> <p>The NRN will help us deal with 3 of the biggest challenges we face: biodiversity loss, climate change and wellbeing.</p> <p>Establishing the NRN will:</p> <ul style="list-style-type: none"> - enhance sites designated for nature conservation and other wildlife-rich places - newly created and restored wildlife-rich habitats, corridors and stepping stones will help wildlife populations to grow and move - improve the landscape's resilience to climate change, providing natural solutions to reduce carbon and manage flood risk, and sustaining vital ecosystems such as improved soil, clean water and clean air - reinforce the natural and cultural diversity of our landscapes, and protect our historic natural environment - enable us to enjoy and connect with nature where we live, work and play - benefiting our health and wellbeing <p>Through our work to create the NRN, by 2042 we will:</p> <ul style="list-style-type: none"> • restore 75% of protected sites on land (including freshwaters) to favourable condition so nature can thrive • create or restore 500,000 hectares of additional wildlife-rich habitat outside of protected sites • recover threatened and iconic animal and plant species by providing more, diverse and better connected habitats • support work to increase woodland cover • achieve a range of environmental, economic and social benefits, such as carbon capture, flood management, clean water, pollination and recreation 	<p>The AoS should advocate the establishment of the NRN</p>
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<p>Carbon Storage and Sequestration by Habitat 2021, Natural England 2021</p>	<p>Achieving 'net zero' greenhouse gas (GHG) emissions by 2050 is a statutory requirement for the UK and England. It will require major changes in the way we manage the land, coast, and sea, alongside decarbonisation of the energy, transport and other sectors. The natural environment can play a vital role in tackling the climate crisis as healthy ecosystems take up and store a significant amount of carbon in soils, sediments and vegetation. Alongside many other negative impacts, the destruction and degradation of natural habitats has resulted in the direct loss of carbon stored within them. Restoring natural systems can start to reverse this damage at the same time as supporting and enhancing biodiversity, alongside delivering co-benefits for climate change adaptation, soil health, water management and society.</p>	<p>The AoS should advocate the protection and restoration of natural habitats as they deliver carbon storage benefits alongside many other benefits</p>
<p>Climate Change Adaptation Manual</p> <p>Evidence to support nature conservation in a changing climate, RSPB, Natural England, 2020</p>	<p>The need for climate change adaptation has become widely recognised in the last 20 years. The environmental sector was one of the first to identify the need and to start developing approaches to adaptation. Initially much of the focus was on identifying general principles. This was an essential first step, but adaptation needs to be embedded into decision-making in specific places and circumstances. There can be a big gap between general principles and specific applications. Effective adaptation requires local knowledge and experience, combined with relevant scientific information and an understanding of practical options. It will be assisted by sharing good practice and evidence of what techniques have worked in particular places and situations.</p> <p>Utilise the concept of sustainable adaptation to look at the prerequisites for a long-term, integrated approach to adaptation, including the synergies and trade-offs associated with cross-sectoral adaptation. Four key principles:</p>	<p>The AOs should embed sustainable climate change adaptation on energy infrastructure decision-making processes</p>

	<ul style="list-style-type: none"> o Adaptation should aim to maintain or enhance the environmental, social and economic benefits provided by a system, while accepting and accommodating inevitable changes to it. o Adaptation should not solve one problem while creating or worsening others. Action that has multiple benefits and avoids creating negative effects for other people, places and sectors should be prioritised. o Adaptation should seek to increase resilience to a wide range of future risks and address all aspects of vulnerability, rather than focusing solely on specific projected climate impacts. o Approaches to adaptation should be flexible and not limit future action <p>Adaptation often needs to be developed with less knowledge and more uncertainty than is usual when making management decisions. Accepting uncertainty and adopting approaches such as adaptive management to deal with it is widely advocated.</p>	
The Smoke Control Areas (Authorised Fuels) England (No. 2) Regulations 2014	<p>The Regulations provide a list of fuels which are authorised to be used in smoke control areas in England.</p> <p>The compliance actions are as follows:</p> <p>If located in a smoke control area, ensure that only the following fuels are used:</p> <ul style="list-style-type: none"> • Anthracite; • Semi-anthracite; • Electricity; 	Protection of air quality should be considered within the AoS.

	<ul style="list-style-type: none"> • Gas; • Low volatile steam coals; and • Fuels described in the Schedule to these regulations. <p>The overall purpose of the Regulations is to improve air quality.</p>	
National Planning Policy Framework (NPPF, 2021)	<p>The NPPF which sets out the government’s planning policies for England was revised in July 2021. The most relevant changes in the context of the Energy NPS are as follows:</p> <p>Chapter 2: Achieving Sustainable Development now acknowledges that members of the UN have agreed to pursue the 17 Global Goals for Sustainable Development in the period to 2030. Minor edits have been made to phrasing, setting out clearly that the environmental objective is now to protect and enhance, and to improve biodiversity, where before the requirement was simply to contribute to these matters.</p> <p>The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. At a similarly high level, members of the United Nations – including the United Kingdom – have agreed to pursue the 17 Global Goals for Sustainable Development in the period to 2030. These address social progress, economic well-being and environmental protection.</p> <p>Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in</p>	<p>The AoS will need to consider full range of sustainability issues set out in the NPPF. This is a core document and area of consideration.</p>

	<p>mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):</p> <p>a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;</p> <p>b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and</p> <p>c) an environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.</p> <p>These objectives should be delivered through the preparation and implementation of plans and the application of the policies in this Framework; they are not criteria against which every decision can or should be judged. Planning policies and decisions should play an active role in guiding development towards sustainable solutions, but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area.</p> <p>The NNPF is accompanied by relevant Planning Practice Guidance as follows:</p>	
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	<ul style="list-style-type: none"> • Air quality (2016): Provides guidance on how planning can take account of the impact of new development on air quality; • Appropriate assessment (2019): Guidance on the use of Habitats Regulations Assessment • Climate change (2019): Advises how to identify suitable mitigation and adaptation measures in the planning process to address the impacts of climate change. • Environmental Impact Assessment (2020): Explains requirements of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017. • Flood risk and coastal change (2022): Advises how to take account of and address the risks associated with flooding and coastal change in the planning process. • Green Belt (2019): Advice on the role of the Green Belt in the planning system • Hazardous substances (2019): Explains planning controls relating to the storage of hazardous substances in England and how to handle development proposals around hazardous establishments. • Healthy and safe communities (2022): Guidance on promoting healthy and safe communities. • Historic environment (2019): Advises on enhancing and conserving the historic environment. • Land affected by contamination (2019): Provides guiding principles on how planning can deal with land affected by contamination. • Light pollution (2019): Advises on how to consider light within the planning system. • Natural environment (2019): Explains key issues in implementing policy to protect and enhance the natural environment, including local requirements. • Noise (2019): Advises on how planning can manage potential noise impacts in new development. • Open space, sports and recreation facilities, public rights of way and local green space (2014): Gives key advice on open space, sports and 	
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	<p>recreation facilities, public rights of way and the new Local Green Space designation.</p> <ul style="list-style-type: none"> • Tree Preservation Orders and trees in conservation areas (2014): Explains the legislation governing Tree Preservation Orders and tree protection in conservation areas • Renewable and low carbon energy (2023): Guidance to help local councils in developing policies for renewable and low carbon energy and identifies the planning considerations. • Waste (2015): Provides further information in support of the implementation of waste planning policy. • Water supply, wastewater and water quality (2019): Advises on how planning can ensure water quality and the delivery of adequate water and wastewater infrastructure 	
Framework of National Character Areas	<p>This is a project that aims to map and describe the diverse landscape of England at a regional scale. It develops the idea of a landscape as a framework leading to better management of the environment.</p> <p>Key components are:</p> <ul style="list-style-type: none"> • Regional landscape character and associated descriptions. The key characteristics of each landscape type are described under 'physical landscape', 'biodiversity', 'historic character' and 'perceptual landscape' headings. • Regional landscape character and associated descriptions. • Physical landscape UNITS and associated geology, landform, ground type and land cover information upon which the landscape types and areas mapping and descriptions are based. 	Ensure protection and enhancement of landscapes is considered as an Objective within the AoS.
National Flood and Coastal Erosion Risk Management	<p>This Strategy describes what needs to be done by all risk management authorities involved in flood and coastal erosion risk management for the benefit of people and places.</p>	Ensure that flood and coastal erosion risk is included as an

Strategy for England 2020	<p>The Strategy has three core ambitions concerning future risk and investment needs:</p> <ol style="list-style-type: none"> 1. Climate resilient places: working with partners to bolster resilience to flooding and coastal change across the nation, both now and in the face of climate change. 2. Today's growth and infrastructure resilient in tomorrow's climate: Making the right investment and planning decisions to secure sustainable growth and environmental improvements, as well as resilient infrastructure. 3. A nation ready to respond and adapt to flooding and coastal change: Ensuring local people understand their risk to flooding and coastal change, and know their responsibilities and how to take action. 	objective within the AoS framework.
Government Policy Statement on Flood and Coastal Erosion Risk Management Strategy	<p>This policy statement sets out the government's long-term ambition to create a nation more resilient to flood and coastal erosion risk. This Policy Statement sets out five policy areas which will drive this ambition:</p> <ul style="list-style-type: none"> • Upgrading and expanding our national flood defences and infrastructure; • Managing the flow of water more effectively; • Harnessing the power of nature to reduce flood and coastal erosion risk and achieve multiple benefits; • Better preparing our communities; and • Enabling more resilient places through a catchment-based approach. 	Ensure that flood and coastal erosion risk is included as an objective within the AoS framework.
Marine Plans for England	<p>There are 11 marine plans in England. A marine plan will:</p> <ul style="list-style-type: none"> • encourage local communities to be involved in planning • make the most of growth and job opportunities • consider the environment from the start • enable sustainable development in the marine area • integrate with planning on land • save time and money for investors and developers by giving clear guidance on things to consider or avoid 	Major elements of energy infrastructure are located in coastal locations and the MPS has clear objectives in relation to coastal and marine areas. The AoS framework should consider sustainable use of the marine environment, in

	<ul style="list-style-type: none"> • encourage shared use of busy areas to benefit as many industries as possible • encourage developments that consider wildlife and the natural environment 	particular relating to water quality and use of the coastal zone.
Biodiversity 2020: A strategy for England's wildlife and ecosystem services	<p>This is a new biodiversity strategy for England which builds on the Natural Environment White Paper and provides a comprehensive picture of how the government are implementing international and EU commitments.</p> <p>It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea. It builds on the successful work that has gone before, but also seeks to deliver a real step change</p>	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.
Healthy Lives, Healthy People: Our strategy for public health in England (2010)	<p>This white paper sets out the government's long-term vision for the future of public health in England. The aim is to create a 'wellness' service (Public Health England) and to strengthen both national and local leadership.</p> <p>The plans set out put local communities at the heart of public health. It states that central control will end and give local government the freedom, responsibility and funding to innovate and develop their own ways of improving public health in their area. There will also be real financial incentives to reward their progress on improving health and reducing health inequalities, and greater transparency so people can see the results they achieve.</p>	AoS needs to consider all vulnerable groups, as well as the wider population.
Contaminated Land (England) Regulations 2006 as amended by the Contaminated Land	<p>Outlines the regulations on contaminated land in order to prevent new land becoming contaminated by polluting substances whilst also tackling historic contamination of sites as it poses risks to human health and the environment.</p>	Ensure that the issue of contamination is addressed through an Objective in the AoS framework.

(England) (Amendment) Regulations 2012		
English National Parks and Broads UK Government Vision and Circular 2010 (DEFRA 2010)	<p>This circular is relevant to those bodies with appropriate statutory functions and will be of interest to all those who have a key role in contributing to the success of the Parks, including landowners and land managers, private companies and voluntary bodies. In relation to the Parks, it sets out:</p> <ul style="list-style-type: none"> • A vision for the English National Parks and the Broads for 2030 • The key outcomes the Government is seeking over the next five years to ensure early progress towards the vision and suggested actions for achieving those outcomes; • The key statutory duties of the National Park authorities (NPAs) and the Broads Authority (together 'the Authorities') and how they should be taken forward • Policy on governance of the Authorities • The contributions needed from others. 	The AoS should include objectives specific to the protection of landscape features and designated areas including National Parks and Broads UK.
Environmental Damage (Prevention and Remediation) (England) Regulations 2015 as amended by The Environmental Damage (Prevention and Remediation) (England)	These regulations came into force on 19th July 2015. They impose obligations on operators of certain activities requiring them to prevent or remediate environmental damage. They apply to damage to protected species, natural habitats, sites of special scientific interest (SSSIs), water and land	Ensure that the issue of protection and enhancement of biodiversity and designated sites is addressed through an Objective in the AoS framework.

(Amendment) Regulations 2019		
Safeguarding our Soils: a strategy for England 2009	<p>The purpose of this strategy is to highlight the areas in which soil will be prioritised and to focus attention on tackling degradation threats. The vision of this paper is to try and ensure that by 2030, all England's soils will be managed sustainably and depredation threats tackled successfully and that this will improve the quality of England's soils and safeguard their ability to provide essential services for future generations. Key topics include</p> <ul style="list-style-type: none"> • Better protection for agricultural soils • Protecting and enhancing stores of soil carbon • Building the resilience of soils to a changing climate • Preventing soil pollution • Future research and monitoring 	Ensure that protection of soil resources is included as an objective within the AoS framework.
Waste (England and Wales) Regulations 2011 as amended by The Waste (England and Wales) (Amendment) Regulations 2014	<p>These regulations implement the revised EU Waste Framework Directive 2008/98 which sets requirements for the collection, transport, recovery and disposal of waste. It outlines that it is a requirement for businesses to confirm that they have applied the waste management hierarchy when transferring waste and include a declaration to this effect on their waste transfer note or consignment note. The regulations apply to businesses that:</p> <ul style="list-style-type: none"> • Produce waste • Import or export waste • Carry or transport waste • Keep or store waste • Treat waste 	Ensure that waste minimisation and resource efficiency are included as an Objective within the AoS.

	<ul style="list-style-type: none"> • Dispose of waste • Operate as waste brokers or dealers 	
<p>The Environmental Targets (Biodiversity) (England) Regulations 2022</p>	<p>These Regulations set long-term targets in respect of three matters within the priority area of biodiversity under section 1 of the Environment Act 2021. Regulations 4, 7 and 14 specify targets for the purposes of the Secretary of State's duty in section 1 of the 2021 Act to set a long-term target in respect of biodiversity. Regulation 11 specifies a target for the purposes of the Secretary of State's duty in section 3 of the 2021 Act to set a target in respect of a matter relating to the abundance of species.</p> <p>Long-term biodiversity target: species' extinction risk target: The long-term biodiversity target for species' extinction risk is to reduce the risk of species' extinction by 2042, when compared to the risk of species' extinction in 2022.</p> <p>Measurement of species' extinction risk target: The target is met by 31st December 2042 if the extinction risk value for 2042 calculated in accordance with paragraph (2) has a greater value than the baseline value, with the extinction risk value for 2042 and the baseline value being expressed as values in a range from 1 to 0 where—</p> <p>(a) a value of 1 would indicate that all baseline species were of Least Concern; and</p> <p>(b) a value of 0 would indicate that all baseline species were Regionally Extinct.</p> <p>(2) The Secretary of State must ensure that an extinction risk value for 2042 is calculated in 2042 using the same methodology that was used to calculate the baseline value(3), to indicate the aggregate risk of extinction for all baseline species at the time of its calculation.</p>	<p>The AoS will need to consider the risk of species' extinction 2042 target.</p>

	<p>(3) In this regulation— “baseline species” means a species listed in the 2022 Red List Index for England; “the baseline value” means the value of 0.9070, being the value set out in the 2022 Red List Index for England to indicate the aggregate risk of extinction for all baseline species.</p> <p>(4) In this regulation— (a) a species is considered to be of Least Concern when it is classified as such for the purposes of calculating the 2022 Red List Index for England;</p> <p>(b) a species is Regionally Extinct when it is classified as such for the purposes of calculating the 2022 Red List Index for England.</p> <p>Reporting date for the species’ extinction risk target: For the purposes of section 6(1) of the 2021 Act (environmental targets: reporting duties), the reporting date for the target in regulation 4 is 1st July 2043.</p>	
The Environmental Targets (Woodland and Trees Outside Woodland) (England) Regulations 2022	<p>2050 Target</p> <p>This regulation specifies a long-term target in accordance with section 1(1) of the 2021 Act in respect of the percentage of land in England covered by woodland and trees outside woodland. The target is that by the end of 31st December 2050 at least 16.5% of all land in England is covered by woodland and trees outside woodland.</p> <p>Measurement</p> <p>To determine whether the target in regulation 3 is met, the area of land covered by woodland and trees outside woodland is to be calculated by the Forestry Commission.</p>	The AoS will need to consider the 2050 woodland target
The Environmental Targets (Marine	The regulations create a legally binding target that requires at least 70% of protected features in MPAs to be in a favourable condition by 31 December 2042,	

Protected Areas) Regulations 2022	with the remaining features to be in a recovering condition. This target will set, for the first time, a time-bound target for the recovery of protected features.	
The Environmental Targets (Fine Particulate Matter) (England) Regulations 2022	<p>These Regulations set an annual mean concentration target. The target is that by the end of 31st December 2040 the annual mean level of PM2.5 in ambient air must be equal to or less than 10 µg/m³ (“the target level”).</p> <p>The annual mean concentration target is met by 31st December 2040 if, at every relevant monitoring station, the annual mean level of PM2.5 in ambient air, calculated in accordance with regulation 15 and rounded to the nearest whole number of µg/m³, is equal to or less than the target level in the year 2040.</p> <p>Reporting date</p> <p>6. For the purposes of section 6(1) of the 2021 Act the reporting date for the annual mean concentration target is 15th July 2041.</p>	The AoS will need to consider the PM2.5 annual level target
The Environmental Targets (Residual Waste) (England) Regulations 2022	The Regulations specify the standard to be achieved in respect of the target and the date by which it must be achieved. Regulation 2 makes provision in respect of a long-term target to ensure that the total mass of residual waste per head of population in England does not exceed 287 kilograms by 31st December 2042.	The AoS must consider residual waste per head of population target
England Trees Action Plan 2021-2024	<p>Building on ambitions outlined in the 25 Year Environment Plan, Government will focus on:</p> <p>Nature Recovery: The government will continue to improve the condition and increase the extent of most precious woodland habitats, such as protected sites and irreplaceable ancient woodlands.</p> <p>Levelling up through a thriving forest economy: The government will encourage demand for UK grown timber which can reduce the carbon footprint from imports and reduce emissions by replacing carbon-intensive materials and encourage innovative green finance for trees and woodlands.</p>	The AoS must recognise the multi benefits trees and woodlands can provide.

	<p>Trees and woodlands for water and soil: The right trees and woodland in the right places along and near rivers and within water catchments present opportunities for improving water quality, for flood alleviation and nature recovery. Soil is critical to supporting trees and woodland and the government will improve the understanding of appropriate soil management to sequester carbon and protect this precious resource from degradation and inappropriate tree establishment.</p> <p>Trees and woodlands for people in town and country: Trees and woodlands can cool the settlements, improve air quality and contribute to community cohesion and sense of place. The government will take steps to improve public access to trees and woodlands in a responsible way, encourage community-led tree planting and invest in partnerships with communities and local government.</p> <p>Heritage and Landscape: Trees and woodlands are important features in the landscapes. The government will encourage greater landscape scale planning which will enhance and transform landscape character, while protecting and conserving heritage assets from inappropriate tree planting and during woodland management.</p> <p>Trees outside woodlands: Trees throughout the environment such as wood pastures, ancient and veteran trees, scrub, scattered and hedgerow trees contribute to England's natural beauty and are important spaces for nature. The government must continue to protect and enhance these features.</p> <p>Healthy, resilient trees and woodlands: The government will act now to help the trees and woodlands adapt, to enhance their resilience to stresses by reducing risks and encouraging greater diversity.</p>	
National Review of Waste Policy in England 2011	<p>This document is a review of waste policy in England and is guided by a waste hierarchy which is a guide to sustainable waste management and a legal requirement. Key objectives are the use of more sustainable approaches to the use of materials and to improve the service to householders and businesses in order to deliver environmental benefits and support economic growth. This review covers a range of topics including:</p>	<p>Ensure that waste minimisation and resource efficiency are included as an Objective within the AoS.</p>

	<ul style="list-style-type: none"> • Sustainable use of materials and waste prevention • Regulations and enforcement • Food waste • Energy recovery • Infrastructure and planning • Next steps in waste policy. 	
Waste Management Plan for England 2021	The Waste Management Plan for England is an analysis of the current waste management situation in England. The plan does not introduce new policies or change how waste is managed in England. Its aim is to bring current waste management policies together under one national plan.	No implications. Informative only.
Waste Prevention Programme for England 2013	This Programme sets out the government's view of the key roles and actions which should be taken to move towards a more resource efficient economy. As well as describing the actions the government is taking to support this move, it also highlights actions businesses, the wider public sector, the civil society and consumers can take to benefit from preventing waste.	Ensure that waste minimisation and resource efficiency are included as an Objective within the AoS.
Noise Policy Statement for England 2010	<p>The objectives of the Noise Policy Statement for England (NPSE) sets out three noise levels to be defined by the noise assessor: These are as follows:</p> <ul style="list-style-type: none"> • NOEL – No Observed Effect Level. This is the level below which no effect can be detected. Below this level there is no detectable effect on health and quality of life due to noise. • LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected. • SOAEL – Significant Observed Adverse Effect Level – This is the level above which significant adverse effects on health and quality of life can occur. 	Ensure that the health and well-being of people is addressed through an objective in the AoS framework and that noise issues are considered.

	<p>The NPSE considers that the noise levels above the SOAEL would be seen to have, by definition, significant adverse effects and would be considered unacceptable. Where the assessed noise levels fall between the LOAEL and the SOAEL noise levels the policy statement requires that:</p> <p>“all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur but that efforts should be focused on minimising such effects”</p> <p>Where noise levels are below the LOAEL it is considered there will be no adverse effect. Once the noise levels are below the NOEL there will be no observable change. For the present guidance a numerical definition of LOAEL is given by the WHO Guidelines for Community Noise and BS8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.</p>	
Roads Investment Strategy 2020 - 2025	<p>The second Road Investment Strategy outlines the policy drivers for the allocation of £27.4 billion investment into the SRN in the period 2020-2025, that will also have an influence beyond, looking to prepare the SRN to align with net zero targets by 2050. The Government Objectives document set this direction early, with the full RIS2 providing detail. The Government Objectives sets out the vision for the SRN, by 2050, to be:</p> <ul style="list-style-type: none"> • a network that supports the economy; • a safer and more reliable network; • a greener network; • a more integrated network; and • a smarter network. 	No implications. Informative only.

	<p>These objectives are echoed in more detail in the full RIS2 as well as a roadmap for delivering the vision, focussing on economic growth, housing, tackling emissions, safety, resilience, and innovation, as well as efforts to place users at the heart of everything.</p> <p>RIS2 also sets specific monitoring targets for Highways England to ensure:</p> <ul style="list-style-type: none"> • improving safety for all; • fast and reliable journeys; • a well maintained and resilient network; • being environmentally responsible; • meeting the needs of all users; and • achieving real efficiency. 	
Planning for the Future: A guide to working with Highways England on planning matters	<p>This document describes the approach taken to engage in the planning system and the issues looked at when considering draft planning documents and planning applications. It is aimed at local authorities, developers, Local Enterprise Partnerships (LEPS), community groups and others involved in plan making/development management in respect of land close to any part of the Strategic Road Network (SRN).</p>	<p>Consideration of the need for transport planning to integrate with land use planning in the AoS framework.</p>
Highways England Growth and Housing Fund	<p>The ROAD Investment Strategy established a £100 million Growth and Housing Fund (GHF) to be administrated by Highways England. It provides leverage and flexibility for Highways England to support Local Enterprise Partnerships, local authorities and the private sector to mobilise development sites that require prompt investment in the network to allow them to progress quickly.</p> <p>Maximum investment in an individual scheme is £5 million though £10 million may be considered. It can provide capital investment to bridge funding gaps in highway</p>	<p>No implications. Informative only.</p>

	works and associated transport infrastructure which are preventing economic and housing sites from being progressed. Only schemes that demonstrate that the intervention would be a complement to and not a replacement for other funds from private or public sources are eligible.	
Future Water, the Government's Water Strategy for England (Defra, 2008)	<p>This strategy sets out the Government's plans for water in the future and the practical steps that we will take to ensure that good clean water is available for people, businesses and nature.</p> <p>The document also sets out various goals for 2030 which combines high environmental standards and protection of consumer interests, with a proportionate and effective approach to regulation. Main goals will be to manage surface water more sustainably, by allowing for the increased capture and reuse of water, slow absorption through the ground, and more above-ground storage and routing of surface water separate from the foul sewer, where appropriate. Water will be increasingly managed on the surface, rather than relying on wholesale upgrade of the sewer system to higher design standards, which will be costly and a lengthy process.</p>	The AoS framework should consider protection and enhancement of the water environment and management of surface water sustainably
Government Forestry and Woodlands Policy Statement (2013)	<p>The Policy Statement is designed to enable the forestry sector to protect, improve and expand forestry assets so that these benefits can be maximised now and maintained for the future.</p> <p>The policy aims to ensure a forestry sector and woodland resource that keeps growing and providing benefits, despite threats such as pests and diseases and climate change, without requiring more government intervention.</p>	It is important for the AoS to consider the protection of important trees, woods and forests.

	<p>To achieve this the Policy Statement sites key objectives (in priority order):</p> <ul style="list-style-type: none"> • Protecting the nation's trees, woodlands and forests from increasing threats such as pests, diseases and climate change. • Improving their resilience to these threats and their contribution to economic growth, people's lives and nature. • Expanding them to further increase their value. 	
National Planning Policy for Waste (2014)	<p>This document sets out detailed waste planning policies. It should be read in conjunction with the National Planning Policy Framework and National Policy Statements for Waste Water and Hazardous Waste.</p> <p>The policy provides guidance to local planning authorities in planning for future facilities and determining planning applications.</p>	<p>The AoS should consider including objectives to recommend that waste generated following new energy development is dealt with in a sustainable manner, consistent with the waste hierarchy.</p> <p>The development and operation of the facilities would generate waste and in terms of EN-6 increase the amount of radioactive waste needing long-term disposal.</p>
Climate Change: Second national adaptation	<p>The second National Adaptation Programme (NAP) sets out government's response to the second Climate Change Risk Assessment (CCRA), showing the actions government is, and will be, taking to address the risks and opportunities posed by a changing climate</p>	<p>New energy infrastructure could potentially be situated in floodplains or coastal areas and are therefore susceptible to the effects of climate</p>

programme (2018-2023)	<p>It sets out the key actions needed in relation to the following six priority areas of climate change risks for the UK;</p> <ul style="list-style-type: none"> • Natural environment; • Reducing pressures from spreading diseases and non-native invasive species; • Infrastructure; • People and the built environment; • Business and industry; and • Local government. 	change, such as increases in storm events and rises in sea levels. The AoS should consider objectives which promote resilience to the impacts of climate change.
The Town and Country Planning (Trees Preservation) (England) Regulations 2012	<p>The regulations are made under the powers conferred on the Secretary of State by sections 202A to 202G, 206(1)(b), 212, 213(1)(b), 316(1), 323 and 333(1) of the Town and Country Planning Act 1990.</p> <p>The Regulations require an application to be made for cutting down, topping, lopping or uprooting of any tree with a tree preservation order. This application must:</p> <ul style="list-style-type: none"> • be made in writing to the authority • include all of the information specified on the form • be accompanied by: <ul style="list-style-type: none"> • a plan which identifies the tree or trees to which the application relates; • information specifying the work to be undertaken; • a statement of the applicant's reasons for making the application; and • appropriate evidence describing any structural damage to property or in relation to tree health or safety, as applicable. 	The AoS will need to consider potential impacts on important trees. However, it is acknowledged that identification of individual trees would not be undertaken until EIA.
The National Flood and Coastal Erosion	The Flood and Water Management Act 2010 places a statutory duty on the Environment Agency to develop a National Flood and Coastal Erosion Risk	The impacts of energy development on flood risk and

<p>Risk Management Strategy for England (FCERM) (Environment Agency, 2021)</p>	<p>Management Strategy for England. This strategy describes what needs to be done by all risk management authorities (RMAs) involved in flood and coastal erosion risk management for the benefit of people and places.</p> <p>RMAs must exercise their flood and coastal erosion risk management (FCERM) activities, including plans and strategies, consistently with the strategy. Through its 'strategic overview' role the Environment Agency exercises its strategic leadership for all sources of flooding and coastal change. This strategy seeks to better manage the risks and consequences of flooding from rivers, the sea, groundwater, reservoirs, ordinary watercourses, surface water, sewers and coastal erosion.</p> <p>The strategy provides a framework for guiding the operational activities and decision making of practitioners. It supports the direction set by government policy which includes its FCERM policy statement (Defra, 2020e). The strategy sets out the long-term delivery objectives the nation should take over the next 10 to 30 years. It also includes shorter term, practical measures RMAs should take working with partners and communities.</p>	<p>the vulnerability of infrastructure to flood risk should be considered. As part of the siting process, flood risk areas should be avoided.</p>
<p>England Tree Strategy Consultation (2020)</p>	<p>A consultation aiming to inform the Government update on tree, woodland and forestry policy – looking to increase tree planting, connect people to nature and improve woodland management leading to supporting the economy and helping to address climate change. Trees are stated as “a unique natural asset that play a crucial role in combating the biodiversity and climate crises”.</p> <p>Subject to consultation, the government is looking to increase tree planting to 30,000 hectares per year spread out over the UK by 2025. This will contribute towards the Nature Recovery Network, aiming to either restore or create 500,000 hectares of habitat that is dense in wildlife.</p> <p>The strategy aims to:</p> <p>Protect and improve our trees and woodlands by:</p> <ul style="list-style-type: none"> • Sustainable management of invasive species 	<p>The AoS will need consider the appropriate tree planting / woodland creation.</p>

	<ul style="list-style-type: none"> • Stronger protection for ancient woodland • Greater proportion of woodland in active management • Adapting treescapes for other uses such as natural flood management <p>Engaging People with Trees and Woodland:</p> <ul style="list-style-type: none"> • Improving green infrastructure quality, supporting better long-term health • Using Community Forests to improve access to existing woodlands and create new ones <p>Supporting the Economy:</p> <ul style="list-style-type: none"> • Expanding the market for wood products and upskilling farmers and land managers to add trees into their businesses <p>Supporting sustainable timber and further sustainable uses such as within energy</p>	
The England Trees Action Plan 2021-2024 (2021)	<p>Trees and woodlands can provide huge benefits for people, nature, climate and the economy and the action plan aims to maximise them. Building on ambitions outlined in the 25 Year Environment Plan, Government will focus on:</p> <p>Nature Recovery: Trees and woodlands will form a core part of the Nature Recovery Network, by providing important habitats themselves as well as connecting other wildlife rich habitats. Establishing native woodland has made the greatest contribution to the increase in priority habitats in recent years, and the government will continue to improve the condition and increase the extent of most precious woodland habitats, such as protected sites and irreplaceable ancient woodlands. This will contribute to the global goals to be agreed at the Convention on Biological Diversity in 2021 and the commitment to protect 30% of the land by 2030. The government will continue to support species recovery through Forestry England's reintroduction programme, which has reintroduced pine martens to the Forest of Dean, white-tailed eagles to the Isle of Wight, and two enclosed projects for beaver.</p> <p>Trees and woodlands for climate change mitigation: The Climate Change Committee recommends that the government increase planting across the UK to meet net zero. The government will work with the Devolved Administrations to deliver a UK-wide step change in tree planting and establishment. Woodland carbon offers exciting opportunities for the private sector and other investors and the government will work to develop these markets further.</p>	The AoS must recognise the multi benefits trees and woodlands can provide.

Levelling up through a thriving forest economy: Forestry is an economically important sector, particularly in often neglected parts of England. The government will encourage demand for UK grown timber which can reduce the carbon footprint from imports and reduce emissions by replacing carbon-intensive materials and encourage innovative green finance for trees and woodlands. In addition, the government will work with the sector to develop the skills and resources to deliver the ambitions. The government will see that trees and woodlands contribute to the bottom line of more businesses in England.

Trees and woodlands for water and soil: Establishing trees and woodlands can impact on water resources, and this may be amplified as the climate changes. The right trees and woodland in the right places along and near rivers and within water catchments present opportunities for improving water quality, for flood alleviation and nature recovery. Soil is critical to supporting trees and woodland and the government will improve the understanding of appropriate soil management to sequester carbon and protect this precious resource from degradation and inappropriate tree establishment.

Trees and woodlands for people in town and country: The COVID-19 pandemic has brought home the important role nature plays in improving the wellbeing and mental health and is often most valuable when close to and part of the places the government live, work and play. Trees and woodlands can cool the settlements, improve air quality and contribute to community cohesion and sense of place. The government will take steps to improve public access to trees and woodlands in a responsible way, encourage community-led tree planting and invest in partnerships with communities and local government.

Heritage and Landscape: Trees and woodlands are important features in the landscapes. The government will encourage greater landscape scale planning which will enhance and transform landscape character, while protecting and conserving heritage assets from inappropriate tree planting and during woodland management.

Trees outside woodlands: Trees throughout the environment such as wood pastures, ancient and veteran trees, scrub, scattered and hedgerow trees contribute to England's natural beauty and are important spaces for nature. The government must continue to protect and enhance these features. Agroforestry will also play an important role in delivering more trees on farms and in the

	<p>landscape, improving climate resilience and encouraging more wildlife and biodiversity in the farming systems.</p> <p>Healthy, resilient trees and woodlands: Climate change threatens the trees and woodlands, increasing the risks from pests, diseases, wildfire and long-term changes to growing conditions. The government will act now to help the trees and woodlands adapt, to enhance their resilience to stresses by reducing risks and encouraging greater diversity. The government will respond swiftly to outbreaks of pests and diseases and improve the management of deer and grey squirrels.</p>	
30x30 Government Commitment (2020)	<p>The Prime Minister has committed in September 2020 to protect 30% of the UK's land by 2030.</p> <p>Existing National Parks, Areas of Outstanding Natural Beauty and other protected areas already comprise approximately 26% of land in England. An additional 4% – over 400,000 hectares, the size of the Lake District and South Downs national parks combined – will be protected to support the recovery of nature.</p> <p>The government will work with the Devolved Administrations to agree an approach across the UK, and with landowners and civil society to explore how best to increase the size and value of our protected land.</p> <p>The government has committed significant new investment to support environmental enhancement and protection in England through the Nature for Climate Fund and the new Environmental Land Management (ELM) scheme.</p>	The AoS must consider the target set by Government.
Nature for Climate Fund	<p>The Nature For Climate Peatland Grant Scheme (NCPGS), administered by Natural England, has awarded Restoration Grant funding to five successful applicants. Over the next four years they will each receive a share of £16 million from the Nature for Climate Fund, to restore peatland. This is Natural England's</p>	

	<p>first round of NCPGS Restoration Grants, with more rounds planned for the next two years.</p> <p>Peatlands are Earth's largest terrestrial carbon store, holding more than twice the amount of carbon in all the world's forests. They cover 10.9% of England's land area. Unfortunately, 87% of our peatlands are degraded. In this state, they do not capture and store carbon but emit an estimated 10 million tonnes of carbon dioxide equivalent every year.</p> <p>The NCPGS aims to capture this carbon by setting 35,000 ha of degraded peatland on a path to restoration by 2025. This will help deliver the UK's Net Zero target. It will contribute to the Nature Recovery Network with wider benefits to biodiversity, water quality and natural flood management</p>	
<p>The Green Book, Central government guidance on appraisal and evaluation (2020)</p>	<p>The Green Book is guidance issued by HM Treasury on how to appraise policies, programmes and projects. It also provides guidance on the design and use of monitoring and evaluation before, during and after implementation.</p> <p>The key specialisms involved in public policy creation and delivery, from policy at a strategic level to analysis, commercial strategy, procurement, finance, and implementation must work together from the outset to deliver best public value. The Treasury's five case model is the means of developing proposals in a holistic way that optimises the social / public value produced by the use of public resources.</p> <p>Aspects of particular interests to the AoS:</p> <p>Greenhouse gas emissions and energy efficiency values - the creation of GHGs has a social cost based on its contribution to climate change. To estimate the</p>	<p>The AoS to advocate accounting for social cost of GHG and effects on natural environment and use of Climate Change Risk Assessment (CCRA to consider current and potential future climate risks and vulnerability to risks of energy projects.</p>

social cost of an intervention it is necessary to include the costs of emitting GHGs. Energy efficiency has a direct social value, in addition to the value of a reduction in GHGs, as the energy saved itself has a direct benefit to society (similarly, activities that create extra demand for energy have a direct energy cost).

Assessing and valuing effects on the natural environment - Understanding natural capital provides a framework for improved appraisal of a range of environmental effects alongside potentially harmful externalities such as air pollution, noise, waste and GHGs. Natural capital stock levels should be systematically measured and monitored for the social costs and benefits of their use to be understood and controlled (see report to the Natural Capital Committee). A focus solely on the marginal valuation of a loss in services may overlook the potential for large reductions in stocks. This could then lead to dramatic reductions in present or future services. Similarly, the cumulative effects of multiple decisions on natural capital stocks need to be considered. Where appropriate therefore, and particularly for major impacts, assessments should consider whether affected natural assets are being used sustainably.

Vulnerability to climate change - The Climate Change Risk Assessment (CCRA) should be used to consider current and potential future climate risks and vulnerability to risks of an intervention. The CCRA provides a framework that quantifies interactions with climate risk. It enables a consideration of the role of climate in altering the scale and distribution of costs and benefits over the lifetime of the proposal. Supplementary guidance, Accounting for the effects of Climate Change provides steps to determine whether climate risks are relevant in relation to the appraisal of an intervention.

<p>Natural England's Green Infrastructure Standards for England 2023</p>	<p>The Green Infrastructure Standards are a key component of the Green Infrastructure Framework. The Standards aim to provide clarity on the quality and quantity of green infrastructure needed to deliver climate change adaptation, net zero and well being benefits. They define what good green infrastructure “looks like”. The five headline Standards are:</p> <ol style="list-style-type: none"> 1. Green Infrastructure Strategy Standard 2. Accessible Greenspace Standard 3. Urban Nature Recovery Standard 4. Urban Greening Factor Standard 5. Urban Tree Canopy Cover Standard <p>The Headline Green Infrastructure Standards distinguish the recommended levels of achievement for major new developments and for area wide application.</p>	<p>AoS should promote the important role of good quality Green Infrastructure.</p>
<p>Waste Management Plan for England, DEFRA 2021</p>	<p>This Waste Management Plan for England will fulfil the requirements of the Waste (England and Wales) Regulations 2011 for the waste management plan to be reviewed every six years. The Plan, and its associated documents, together with local authorities' waste local plans and combined with the equivalent plans produced by the devolved administrations in Scotland, Wales and Northern Ireland, and Gibraltar, will ensure that waste management plans are in place for the whole of the UK and Gibraltar.</p> <p>While the Resources and Waste Strategy sets out a vision and a number of policies to move to a more circular economy, such as waste prevention through policies to support reuse, repair and remanufacture activities, the Waste Management Plan for England focuses on waste arisings and their management. It is a high-level, non-site specific document. It provides an analysis of the current</p>	

	<p>waste management situation in England and evaluates how the Plan will support implementation of the objectives and provisions of the Waste (England and Wales) Regulations 2011. It will be supplemented by a Waste Prevention Programme for England. This will set out our plans for preventing products and materials from becoming waste, including by greater reuse, repair and remanufacture supported by action to ensure better design to enable this to be done more easily.</p>	
<p>Resources and Waste Strategy for England, DEFRA and Environment Agency 2018</p>	<p>This strategy sets out how material resources will be preserved by minimising waste, promoting resource efficiency and moving towards a circular economy in England. It combines actions we will take now with firm commitments for the coming years and gives a clear longer-term policy direction in line with our 25 Year Environment Plan.</p> <p>It sets out to double resource productivity and eliminate avoidable waste of all kinds (including plastic waste) by 2050, minimise the damage caused to our natural environment by reducing and managing waste safely and carefully and deal with waste crime</p> <p>A more circular economy (re-use, remanufacture, repair, recycle) will keep resources in use for as long as possible. It will allow us to extract maximum value from them, then recover and regenerate products and materials at the end of their lifespan.</p>	<p>The AoS should embed waste minimisation, resource efficiency and circular economy in energy infrastructure decision making processes</p>
<p>The Planning White Paper</p>	<p>The Planning for the Future white paper sets out the Government's proposals for "once in a generation" reform of England's planning system, and separate</p>	<p>Noted – the NPS forms part of the wider planning system.</p>

	<p>proposals to reform the current system of calculating housing need proved controversial.</p> <p>The three pillars of the white paper are;</p> <ul style="list-style-type: none"> • Planning for development; • Planning for beautiful and sustainable places; and • Planning for infrastructure and connected places. 	
<i>Wales</i>		
Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009, updated with Amendment Regulations 2015	These regulations impose obligations on operators of certain activities requiring them to prevent or remediate environmental damage. They apply to damage to protected species, natural habitats, sites of special scientific interest (SSSIs), water and land.	Ensure that the issue of protection and enhancement of biodiversity and designated sites is addressed through the AoS framework.
Historic Environment Act (Wales) 2016	The Historic Environment (Wales) Act 2016 and its associated measures are intended to provide a robust structure for protecting and managing the historic environment. Part 2 makes amendments to the Ancient Monuments and Archaeological Areas Act 1979 primarily in relation to ancient monuments in Wales. It also makes provision for the Welsh Ministers to compile and maintain a register of historic parks and gardens. Part 3 makes amendments to the Planning (Listed Buildings and Conservation Areas) Act 1990 in relation to buildings in	Ensure historic environment objective within AoS framework.

	<p>Wales that are of special architectural or historic interest (“listed buildings”). Part 4 makes other provision about the historic environment in Wales, including provision;</p> <ul style="list-style-type: none"> • for the compilation of a list of historic place names in Wales; • for the compilation of a historic environment record for each local authority area in Wales; and • for the establishment, constitution and functions of the Advisory Panel for the Welsh Historic Environment. 	
Future Wales – The National Plan 2040	<p>Future Wales – the National Plan 2040 is the national development framework, setting the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of communities.</p>	<p>The AoS should consider objectives which promote resilience to the impacts of climate change.</p>
Future Wales Integrated Sustainability Appraisal	<p>The Integrated Sustainability Appraisal (ISA) accompanies the Future Wales – the national plan 2040. The purpose of this report is to explain the iterative assessment process and how this has shaped the NDF from inception to the most recent version. It presents the potential positive and negative effects of the Draft NDF Including Proposed Changes, to inform the consultation process.</p>	<p>Ensure the AoS considers the full range of sustainability issues.</p>
Future Wales Habitats Regulation Assessment	<p>The HRA Report summarises how the NDF has evolved from the Issues and Options stage through to the current NDF, along with the HRA work undertaken at each stage of the process. Whilst the HRA has made it clear that it is difficult at the strategic stage of the development planning process in Wales to be clear about how Natura 2000/ Ramsar sites may or may not be affected by strategic</p>	<p>Ensure protection of Natura 2000 sites and consider these through HRA.</p>

	<p>policy decisions, it notes that the potential implications for Natura 2000/ Ramsar sites have been considered throughout the development of the Plan, such that early avoidance of the issues (and/or reduction of risk) has been a key element of the process when compiling the policies within the NDF.</p>	
<p>State of Natural Resources Report (SoNaRR) for Wales 2020</p>	<p>This is Wales' second assessment of sustainable management of natural resources, including Wales' impact globally. It assesses the extent to which natural resources in Wales are being sustainably managed, and recommends a proactive approach to building resilience. The report links the resilience of Welsh natural resources to the well-being of the people of Wales.</p>	<p>The AoS should include objectives reflective of natural resource uptake, sustainable management and reliance.</p>
<p>Prosperity for All: A Low Carbon Wales</p>	<p>This Plan sets out how Wales aims to meet the first carbon budget (2016-2020) and consequently the 2020 interim target through 100 policies and proposals across Ministerial portfolios.</p> <p>It sets out pathways for the different emissions sectors including looking at sector ambition, emissions profile, the actions to be taken and how the sector is contributing to the well-being goals. The sector chapter pathways are Power, Buildings, Transport, Industry, Land Use, Agriculture, Waste and F-gases.</p>	<p>The AoS should consider including objectives that address the reduction of carbon emissions</p>
<p>Policy Statement on Local ownership of energy generation in Wales – benefitting Wales today and for future generations</p>	<p>The intent of this policy is to retain social and economic benefit from future energy developments located in Wales. It expects all new energy projects in Wales to include at least an element of local ownership, in order to retain wealth within Wales and provide real benefit to communities across Wales. It defines 'community ownership' of a renewable energy project as a renewable energy or renewable storage development located in Wales, which is wholly owned by a social enterprise whose assets and profits are committed to the delivery of social</p>	<p>No implications. Informative only.</p>

	and/or environmental objectives. It sets out that the Welsh Government supports renewable and low carbon energy projects developed by communities, or benefit the host community or Wales as a whole.	
Planning Policy Wales (Edition 11, 2021)	<p>Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs, stated below).</p> <p>There are a number of goals and objectives in relation to the following topics:</p> <ul style="list-style-type: none"> • People and Places: Achieving Well-being Through Placemaking • Strategic and Spatial Choices • Active and Social Places • Productive and Enterprising Places • Distinctive and Natural Places <p>The document offers advice and guidance, for example, how local planning authorities should plan, manage and write Local Development Plans.</p> <p>PPW and Future Wales are supported by a range of other policy and guidance documents, including Technical Advice Notes (TANs) which contain detailed guidance in specific areas.</p> <p>Technical Advice Notes (TANs):</p> <ul style="list-style-type: none"> - TAN 2: Planning and Affordable Housing (2006) - TAN 3: Simplified Planning Zones (1996) - TAN 4: Retail and Commercial Development (2016) - TAN 5: Nature Conservation and Planning (2009) 	The AoS objectives should address environmental protection including protecting biodiversity, conserving landscapes, preserving the historic environment, protecting water resources and the coastal environment, protecting land quality and air quality. It should also include objectives which support economic development, adapting to climate change and reducing greenhouse gas emissions.

	<ul style="list-style-type: none"> - TAN 6: Planning for Sustainable Rural Communities (2010) - TAN 7: Outdoor Advertisement Control (1996) - TAN 10: Tree Preservation Orders (1997) - TAN 11: Noise (1997) - TAN 12: Design (2016) - TAN 13: Tourism (1997) - TAN 14: Coastal Planning (2021) (to be replaced by new TAN 15: Development, Flood Risk and Coastal Erosion, currently due to be published on 1 June 2023) - TAN 15: Development and Flood Risk (2004) (to be replaced by new TAN 15: Development, Flood Risk and Coastal Erosion, currently due to be published on 1 June 2023) - TAN 16: Sport, Recreation and Open Space (2009) - TAN 18: Transport (2007) - TAN 19: Telecommunications (2002) - TAN 20: Planning and the Welsh Language (2017) - TAN 21: Waste (2017) - TAN 23: Economic Development (2014) - TAN 24: The Historic Environment (2017) 	
TAN 5: Nature Conservation and Planning (2009)	<p>This Technical Advice Note provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation.</p> <p>Some key principles which the town and country planning system in Wales should seek to achieve include:</p>	<p>The siting of new energy infrastructure has the potential to adversely affect biodiversity resources. The AoS should contain objectives relating to the protection of biodiversity and geological resources.</p>

	<ul style="list-style-type: none"> • Development which provides a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally. • Helping to ensure that development does not damage, or restrict access to, or the study of, geological sites and features or impede the evolution of natural processes and systems especially on rivers and the coast. • Planning to accommodate and reduce the effects of climate change by encouraging development that will reduce damaging emissions and energy consumption and that help habitats and species to respond to climate change. <p>Local authorities have an important role in delivering biodiversity objectives at a local level. Local Biodiversity Action Plans and Local Agenda 21 Plans can inform development plan preparation and development plan policies may help to maintain or enhance biodiversity.</p>	<p>Baseline data should also be obtained in relation to the location of internationally and nationally important nature conservation sites, for example SPAs.</p>
<p>TAN 6: Planning for Sustainable Rural Communities (2010)</p>	<p>This Technical Advice Note provides guidance on how the planning system can contribute to:</p> <ul style="list-style-type: none"> • Sustainable rural economies. • Sustainable rural housing. • Sustainable rural services. • Sustainable agriculture. <p>It advises planning authorities to produce development plans which set out the spatial vision for rural communities. This should be based on a sound understanding of the functional linkages within the area and the potential for improving the sustainability of the existing settlement pattern.</p> <p>Development plans should also clearly define local need by taking into account the social, economic and environmental characteristics of the area.</p>	<p>The AoS should consider objectives relating to the protection and sustainable development of rural areas.</p> <p>The principles of this TAN should be considered in the preparation of the new NPS.</p>

<p>TAN 11: Noise (1997)</p>	<p>This note provides advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business. It outlines some of the main considerations which local planning authorities should take into account when drawing-up development plans, policies and when determining planning applications for development which will either generate noise or be exposed to existing noise sources.</p>	<p>Noise and vibration can adversely affect human health and the AoS framework should consider an objective that will enable the assessment of effects on human health.</p> <p>Noise and vibration should also be considered when assessing effects on other environmental receptors.</p>
<p>TAN 13: Tourism (1997)</p>	<p>The Wales Tourist Board has responsibility for promoting and developing tourism in Wales. It has a duty to advise the</p> <p>Government and other public bodies, including local authorities, on matters affecting tourism. While 'tourism' cannot be regarded as a single or distinct category of land use, the issues it raises should be addressed in preparing or revising development plans and may feature in development control decisions. Development plans may provide guidance on opportunities for larger scale or innovative projects, appropriate facilities for the countryside or designated areas and the provision of facilities in historic towns and seaside resorts.</p>	<p>Whilst tourism is not directly related to this study, the location of new energy infrastructure has the potential to adversely affect tourism through impacts upon nature conservation, the landscape or coastal areas. The AoS framework should consider a number of objectives addressing environmental protection.</p>

<p>TAN 14: Coastal Planning (1998)</p>	<p>It is for each local planning authority to consider and define the most appropriate coastal zone in its area. Because the boundaries of local authorities may not equate with coastal features and processes, this should be done in consultation with neighbouring authorities and in the knowledge that the overall limits of the coastal zone are determined by the geographical extent of coastal physical processes and human activities related to the coast.</p> <p>Decisions on development proposals below low water mark are generally outside the scope of the planning system, and instead are regulated according to the type of activity. It is vital that planning authorities should recognise and take into account the significance of physical processes at the coast which inevitably transcend these legal boundaries, as well as considering the changes that may have effects in either parts of this dynamic system.</p> <p>Planning considerations will vary depending on the nature of the coastline, but there are a number of specific issues in relation to the coastal zone that the planning system should address.</p> <p>TAN14 specifically provides advice on:</p> <ul style="list-style-type: none"> • Coastal Change and Coastal Erosion; • Recreation development; • Heritage coasts and non-statutory coastal groupings; and • Shoreline Management Plans. <p>Note, TAN14 will be combined with TAN15 in a revised document due to be published in September 2021 by Welsh Government.</p>	<p>The AoS framework should contain objectives that address coastal issues such as water quality, biodiversity, landscape and heritage etc.</p> <p>This TAN is directly relevant to the new NPS, due to the potential for the siting of new energy infrastructure in coastal or estuarine locations. The new NPS should take into consideration the broad principles in the TAN and environmental protection criteria need to be developed to inform the siting process.</p>
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<p>TAN 15: Development and Flood Risk (2004)</p>	<p>This TAN provides technical guidance which supplements the policy set out in Planning Policy Wales in relation to development and flooding. It advises on development and flood risk as this relates to sustainability principles, and provides a framework within which risks arising from both river and coastal flooding, and from additional run-off from development in any location, can be assessed. The primary aim of this framework is to direct development away from areas considered to be at high risk from flooding. In addition, one of the aims of the TAN is to ensure new development does not cause or exacerbate flood risk elsewhere.</p> <p>Note, TAN14 will be combined with TAN15 in a revised document due to be published in September 2021 by Welsh Government.</p>	<p>The AoS needs to include objectives relating to flood risk and the need to manage runoff effectively.</p> <p>As the siting of energy infrastructure in a flood risk area could generate significant adverse consequences, appropriate criteria in relation to flood risk need to be considered as part of the process of developing the new NPS.</p>
<p>TAN 16: Sport, Recreation and Open Space (2009)</p>	<p>This Technical Advice Note advises on the role of the planning system in making provision for sport and recreational facilities and informal open spaces, as well as protecting existing facilities and open spaces in urban and rural areas in Wales.</p> <p>Topics discussed include preparation of Open Space Assessments, keeping of existing facilities, provision of new facilities and planning for allotments and spaces for children's and young people's play. It also considers how planning agreements can help to ensure the provision and maintenance of facilities.</p>	<p>The AoS should consider objectives which seek to protect areas of open space and areas used for sport and recreation.</p>
<p>TAN 18: Transport (2007)</p>	<p>At the heart of this TAN is the need for an efficient and safe transport system. It acknowledges the significant impact that transport can have upon human health and the environment.</p>	<p>The AoS should consider objectives that do not adversely affect the efficiency of the transport system and</p>

	<p>Planning Policy Wales and the Wales Transport Strategy aim to secure the provision of transport infrastructure that improves access, builds a stronger economy, improves road safety and fosters more sustainable communities.</p>	<p>seek to reduce greenhouse gas emissions from transportation sources.</p> <p>The preparation of the new NPS should consider the principles of sustainable transport. There will be a need for safe, efficient transport connections to enable the delivery of raw materials and the siting of new energy infrastructure should not adversely affect the strategic transport infrastructure.</p>
TAN 21: Waste (2014)	<p>This Technical Advice Note, in conjuncture with Planning Policy Wales, sets a framework for facilitating the delivery of sustainable waste management infrastructure throughout the planning process.</p> <p>The TAN encourages local planning authorities to create a partnership approach with Natural Resources Wales, others in local and central government, the waste management industry, the voluntary sector and the general public is encouraged. This is because the developing legal environmental and technological circumstances influencing waste resource management will require changes of priorities and solutions that the land use planning system is unable to deliver on its own.</p>	<p>The development and operation of the facilities would generate waste throughout the project lifecycle.</p> <p>The AoS should consider the management of wastes associated with the development, operation and</p>

		decommissioning of new energy infrastructure.
The Waste (Miscellaneous Provisions) (Wales) Regulations 2012	<p>The regulations are designated for the purposes of section 2(2) of the European Communities Act 1972 in relation to the prevention, reduction and management of waste.</p> <p>They amend the Waste (England and Wales) Regulations 2011 by replacing regulation 13. They state that from 1 January 2015, waste collection authorities must collect waste paper, metal, plastic and glass separately. They also impose a duty on waste collection authorities, from that date, when making arrangements for the collection of such waste, to ensure that those arrangements are by way of separate collection. The duties apply to waste classified as waste from households and waste that is classified as commercial or industrial waste.</p>	The AoS should consider including objectives that promote the reduction of waste sent for disposal and encourage re-use, recycling and recovery of waste.
The Town and Country Planning (Trees) (Amendment) (Wales) Regulations 2017	<p>The regulations are made under the powers conferred on the Secretary of State by sections 198(8) and 333(1) of the Town and Country Planning Act 1990. They aim to ensure the protection of trees.</p> <p>The Regulations require an application to be made for cutting down, topping, lopping or uprooting of any tree with a tree preservation order. This application must:</p> <ul style="list-style-type: none"> • be made in writing to the authority • include all of the information specified on the form • be accompanied by: • a plan which identifies the tree or trees to which the application relates; • information specifying the work to be undertaken; 	The AoS will need to consider potential impacts on important trees.

	<ul style="list-style-type: none"> • a statement of the applicant's reasons for making the application; and • appropriate evidence describing any structural damage to property or in relation to tree health or safety, as applicable. 	
The Smoke Control Areas (Authorised Fuels) (Wales) Regulations 2019	<p>The Regulations provide a list of fuels which are authorised to be used in smoke control areas in Wales.</p> <p>The compliance actions are as follows:</p> <p>If located in a smoke control area, ensure that only the following fuels are used:</p> <ul style="list-style-type: none"> • Anthracite; • Semi-anthracite; • Electricity; • Gas; • Low volatile steam coals; and • Fuels described in the Schedule to these regulations. <p>The overall purpose of the Regulations is to improve air quality.</p>	New energy generation stations have the potential to result in emissions to air throughout the project lifecycle. Objectives which encourage protection of air quality should be considered.
The Town and Country Planning (Development Management Procedure) (Wales) Order 2012 as amended by The Town and Country Planning (Development	<p>The central aim of the Regulation is to protect the environment, including species and habitats, from developments. They consolidate with modification the provisions of the Town and Country Planning (General Development Procedure) Order 1995.</p> <p>This Order provides for procedures connected with planning applications, consultations in relation to planning applications, the determination of planning applications, appeals, local development orders, certificates of lawful use or</p>	New energy infrastructure has the potential to have wide-ranging environmental impacts, depending upon location. Objectives which seek to protect the environment as a result of development should be considered.

Management Procedure) (Wales) (Amendment) Order 2017	development, the maintenance of registers of planning applications and related matters.	
Rural Development Plan 2007-2013	<p>Under the EU Rural Development legislation, the Rural Development Plan for Wales provides a framework to:</p> <ul style="list-style-type: none"> • Strengthen our farming and forestry industries in Wales. • Maintain and protect our environment and rural heritage. • Improve economic competitiveness of rural communities and areas. <p>The plan gives details of the characteristics and importance of biodiversity, environmental designations such as National Parks, Areas of Outstanding Natural Beauty, Sites of Special Scientific Interest, water quality and quantity, climate change and global warming.</p>	The AoS framework should seek to include objectives which encourage sustainable management of agriculture and the environment through, for example, protection of biodiversity and the natural environment.
Welsh Government Rural Communities - Rural Development Programme (2014-2020)	<p>This Rural Development Programme is a 7-year investment programme supporting a wide range of activities to achieve its three main objectives:</p> <ul style="list-style-type: none"> • Fostering the competitiveness of agriculture. • Ensuring the sustainable management of natural resources, and climate action. • Achieving a balanced territorial development of rural economies and communities including the creation and maintenance of employment. <p>All projects funded by the Programme must align with one or more of the six European Rural Development Priorities.</p>	The AoS framework should consider including objectives which encourage sustainable management of agriculture and the environment.

<p>Towards Zero Waste - One Wales: One Planet - The Overarching Waste Strategy Document for Wales (2010)</p>	<p>Comprises the new overarching waste strategy document for Wales, setting out a long term framework for resource efficiency and waste management between 2010 and 2050.</p> <p>Towards Zero Waste means that:</p> <ul style="list-style-type: none"> • Waste will be reduced significantly • There will be a strong economy in resource management • Residual waste will be minimised • Landfill will be eliminated as far as possible • Legacy wastes will be tackled. <p>Central indicators of the strategy include a 27% reduction in waste achieved by 2025 and for waste arisings to be reduced by approximately 1.5% (of the 2007 baseline) each year across all sectors.</p> <p>Furthermore, recycling will be maximised, the amount of residual waste produced minimised and as close to zero landfill as possible achieved.</p>	<p>The development and operation of the new energy infrastructure would generate waste. Therefore, the AoS should consider objectives which support the prevention of waste and encourage recycling.</p>
<p>Llwybr Newydd: the Wales Transport Strategy 2021</p>	<p>The Wales Transport Strategy sets out the vision for an accessible, sustainable and efficient transport system. The Strategy sets out three priorities over the next 5 years:</p> <ul style="list-style-type: none"> • Priority 1: Bring services to people in order to reduce the need to travel • Priority 2: Allow people and goods to move easily from door to door by accessible, sustainable and efficient transport services and infrastructure • Priority 3: Encourage people to make the change to more sustainable transport 	<p>The AoS should consider objectives which support the use of sustainable transport.</p>

<p>One Wales: One Planet – the Sustainable Development Scheme for Wales (2009)</p>	<p>The document sets out the steps and actions necessary to achieve sustainable development in Wales, for example, an indicative route map of the journey Wales will need to take to use only its fair share of the earth's resources.</p> <p>The vision for a Sustainable Wales is as follows:</p> <ul style="list-style-type: none"> • Lives within its environmental limits, using only its fair share of the earth's resources so that our ecological footprint is reduced to the global average availability of resources, and we are resilient to the impacts of climate change. • Healthy, biologically diverse and productive ecosystems that are managed sustainably. • A resilient and sustainable economy that is able to develop whilst stabilising, then reducing, its use of natural resources and reducing its contribution to climate change. • Communities which are safe, sustainable and attractive places for people to live and work, where people have access to services, and enjoy good health. • A fair, just and bilingual nation in which citizens of all ages and backgrounds are empowered to determine their own lives, shape their communities and achieve their full potential. 	<p>The AoS should consider objectives which support the reduction of greenhouse gas emissions where possible, for example, in the transportation of raw materials.</p> <p>The economic, social and environmental effects of new energy development will be considered in detail throughout the AoS process.</p>
<p>The Climate Change Strategy for Wales (2010)</p>	<p>The strategy confirms the Assembly Government's commitment to climate change and the areas where it will act and work with relevant partners, to reduce greenhouse gas (GHG) emissions and enable effective climate change adaptation in Wales.</p> <p>The strategy supports the vision for 2050 as set out in the One Wales: One Planet – the Sustainable Development Scheme for Wales (2009).</p> <p>Climate change adaptation is discussed with respect to the transport, business, residential, agriculture and land use, public and waste sectors.</p>	<p>The AoS should consider objectives which support the reduction of greenhouse gas emissions where possible.</p> <p>The AoS should consider objectives which improve the resilience of energy infrastructure to changing climatic conditions throughout the project's lifecycle. Note</p>

		that the emissions targets contained in the Climate Change Strategy for Wales will be superseded by those set under this Act for successive five-year carbon budgets, starting from 2016-2040.
Woodlands for Wales (2011)	<p>This document details Welsh Government's fifty-year strategy for woodlands and trees in Wales. It recognises Wales's trees as an important asset in delivering the Government's key priorities of driving green growth, resilience and safety and tackling poverty.</p> <p>The vision of the strategy is as follows:</p> <p>"Wales will be known for its high-quality woodlands that enhance the landscape, are appropriate to local conditions and have a diverse mixture of species and habitats".</p> <p>It is envisaged that real local and national social and community benefits, thriving woodland-based industries and a better-quality environment throughout Wales can be achieved through delivery of the strategy.</p>	The siting of new energy infrastructure has the potential to directly and indirectly impact upon woodland. The AoS framework should, therefore, include objectives which address the protection of woodland.
The Welsh Historic Environment	The Action Plan clearly lists objectives with respect to heritage assets and the historic environment and the associated practical action required to achieve these	The AoS should consider including objectives which aim

Strategic Statement: Action Plan (2010)	objectives. A timeframe of 2009-2011 and beyond how put allocated to each objective. The lead and supporting bodies for each objective are also stated.	to protect heritage assets and the historic environment.
Water Strategy for Wales (2015)	<p>The strategy sets out the strategic direction for water policy in Wales over the next 20 years and beyond.</p> <p>The vision for the strategy is to “ensure that Wales continues to have thriving water environment which is sustainably managed to support healthy communities, flourishing businesses and the environment. We want the people of Wales to receive first class, value for money water services with water used efficiently, safely and respectfully by all”.</p>	The AoS should consider objectives which contribute to the sustainable use of water resources.
Natural Resource Policy (Welsh Government) (2017)	<p>The focus of the Natural Resource Policy is the sustainable management of Wales’ natural resources, to maximise their contribution to achieving goals within the Well-being of Future Generations Act. The policy sets out three National Priorities:</p> <ul style="list-style-type: none"> • Delivering nature-based solutions, • Increasing renewable energy and resource efficiency, • Taking a place-based approach <p>The Policy sets the context for Area Statements, ensuring that the national priorities for delivering sustainable management of natural resources inform the approach to local delivery.</p>	The AoS should consider the uptake of natural resources during construction and ensure resource efficiency is integrated in development design through objectives specific to sustainable and efficient resource use.
Environment (Wales) Act 2016	Legislation introduced by the National Assembly for Wales enabling the planning and management of the natural resources of Wales in a more sustainable, pro-	The AoS should give particular regard to sustainable management of

	<p>active and joined-up way than was previously possible. The Act has seven main parts:</p> <ul style="list-style-type: none"> • Sustainable management of natural resources • Climate change • Charges for carrier bags • Collection and disposal of waste • Fisheries for shellfish • Marine licensing • Flood and coastal erosion committee 	<p>natural resources, climate change, fisheries and marine licencing and flood and coastal erosion.</p>
<p>Wellbeing of Future Generations (Wales) Act 2015</p>	<p>The act explains what is meant by ‘sustainable development’ and requires public bodies to carry out sustainable development. It requires bodies to set well-being objectives that are to contribute to the achievement of well-being goals and to take steps to meet those objectives, and further requires indicators that measure progress towards achieving the well-being goals.</p> <p>In addition, Well Being Plans, prepared by Public Service Boards under the Wellbeing of Future Generations (Wales) Act assess the state of well being in that area and set local objectives accordingly.</p>	<p>The AoS should include objectives that measure sustainability, and be considerate of well-being objectives/goals.</p>
<p>Planning (Wales) Act 2015</p>	<p>This Act sets out a series of legislative changes to deliver reform of the planning system in Wales, to ensure that it is fair, resilient and enables development. The act addresses 5 key objectives:</p> <ul style="list-style-type: none"> • A modernised framework for the delivery of planning services • Strengthening the plan led approach – the act introduces a legal basis for the preparation of a National Development Framework and Strategic Development Plans 	<p>The AoS should consider objectives that encourage a strategic approach in planning.</p>

	<ul style="list-style-type: none"> Improved resilience – the act allows the Welsh Ministers to direct local planning authorities to work together and for local planning authorities to be merged Frontloading and improving the development management system – the act will introduce a statutory pre- application procedure for defined categories of planning application Enabling effective enforcement and appeals – the act enables changes to enforcement procedures to secure prompt, meaningful action against breaches of planning control and increase the transparency and efficiency of the appeal system. 	
State of Natural Resources Report (SoNaRR) for Wales 2020	This is Wales' second assessment of sustainable management of natural resources, including Wales' impact globally. It assesses the extent to which natural resources in Wales are being sustainably managed, and recommends a proactive approach to building resilience. The report links the resilience of Welsh natural resources to the well-being of the people of Wales.	The AoS should include objectives reflective of natural resource uptake, sustainable management and reliance.
National Strategy for Flood and Coastal Erosion Risk Management in Wales (2020)	<p>This Strategy sets out Welsh policies on flood and coastal erosion risk management. It establishes a delivery framework that meets the needs of Wales, and sets out four overarching objectives for managing flood and coastal erosion risk in Wales:</p> <ul style="list-style-type: none"> Reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion Raising awareness of and engaging people on flood and coastal erosion risk Providing an effective and sustained response to flood and coastal erosion events Prioritising investment in the most at risk communities. 	The AoS should include objectives specific to coastal erosion risk management. Development near the coast has the potential to lead to coastal erosion through changing coastal processes.
The Contaminated Land (Wales)	These regulations make provision, in relation to Wales, for the identification and remediation of contaminated land under Part 2A of the Environmental Protection	Energy infrastructure has the potential to lead to land

Regulations 2006 as amended by the Contaminated Land (Wales) (Amendment) Regulations 2012	Act 1990. It sets out the regime to deal with contaminated land, and provides a system to identify and remediate sites where contamination is causing unacceptable risk to human health and/or the wider environment.	contamination and appropriate consideration should be given to potential impacts and how they can be addressed.
Welsh National Marine Plan (Welsh Government (2019)	<p>The Welsh National Marine Plan is the first marine plan for Wales and represents the start of a process of shaping seas to support economic, social, cultural and environmental objectives. Marine planning will guide the sustainable development of our marine area by setting out how proposals will be considered by decision makers.</p> <p>It sets out the vision for the Welsh inshore and offshore marine plan regions as:</p> <ul style="list-style-type: none"> • Welsh seas are clean, healthy, safe, productive and biologically diverse: <ul style="list-style-type: none"> - Through an ecosystem approach, natural resources are sustainably managed and our seas are healthy and resilient, supporting a sustainable and thriving economy; - Through access to, understanding of and enjoyment of the marine environment and maritime cultural heritage, health and well-being are improving; - Through Blue Growth more jobs and wealth are being created and are helping coastal communities become more resilient, prosperous and equitable with a vibrant culture; and - Through the responsible deployment of low carbon technologies, the Welsh marine area is making a strong contribution to energy security and climate change emissions targets. 	New energy infrastructure will potentially be situated in coastal areas and the Plan is therefore of relevance to the planning process. The AoS should establish objectives which align with the aims of the Plan and protect the marine and coastal environment.
Shoreline Management Plans applicable in Wales	A Shoreline Management Plan policy describes how a stretch of shoreline is most likely to be managed to address flood and/or erosion – although this is subject to	New energy infrastructure will potentially be situated in coastal areas and the Plan is therefore of relevance to the

	<p>conditions. Stretches of coast are divided into ‘management units’, and for each of these one of four different management policies are agreed, as follows:</p> <ul style="list-style-type: none"> • No active intervention – there is no planned investment in defending against flooding or erosion, whether or not an artificial defence has existed previously • Hold the (existing defence) line – an aspiration to build or maintain artificial defences so that the position of the shoreline remains. • Sometimes, the type or method of defence may change to achieve this result • Managed realignment – allowing the shoreline to move naturally, but managing the process to direct it in certain areas. This is usually done in low-lying areas, but may occasionally apply to cliffs. 	<p>planning process. The AoS should establish objectives which align with the aims of the Plan and protect the shoreline environment and prevent flooding and/or erosion.</p>
<p>Natural Wales Resources Technical Guidance</p>	<p>NRW (https://naturalresources.wales/?lang=en) has recently produced technical guidance which is relevant to the energy technologies covered by the AoS. These provide information on:</p> <ul style="list-style-type: none"> • Marine aggregate extraction • Offshore wind developments • Marine renewable energy developments • Using adaptive management for marine developments • Scoping an Environmental Impact Assessment for marine developments • Marine ecology datasets for marine developments - guidance for developers on the datasets NRW holds that is useful in scoping assessments. • Marine vertebrate conservation legislation in Wales • Benthic habitat assessments for marine developments • Marine physical processes and Environmental Impact Assessment (EIA) <p>NRW has further relevant guidance under development which will be added to their website as soon as it is available.</p>	<p>The AoS should consider guidance provided by NRW Technical Notes.</p>

Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009	These regulations came into force on 6 th May 2009. They impose obligations on operators of certain activities requiring them to prevent or remediate environmental damage. They apply to damage to protected species, natural habitats, sites of special scientific interest (SSSIs), water and land.	Ensure that the issue of protection and enhancement of biodiversity and designated sites is addressed through an Objective in the AoS framework.
Natural Resources Policy	NRW developed a series of Area Statements. Each Area Statement outlines the key challenges facing that particular locality, what can be done to meet those challenges, and how we can better manage our natural resources for the benefit of future generations. Viewed together, the seven Area Statements can be seen as a collaborative response to what is known as the Natural Resources Policy, published by the Welsh Government in 2017, which sets out the key challenges and opportunities for the sustainable management of Wales' natural resources into the future.	Ensure the sustainable management of natural resources is considered as an Objective in the AoS framework
Future Wales: The National Plan (2040)	<p>The Planning (Wales) Act 2015 (the 2015 Act) requires the Welsh Government to develop a National Development Framework (NDF). Wales's first NDF, Future Wales: the National Plan 2040 (Future Wales), was published in February 2021.</p> <p>Future Wales sets out a 20 year land use framework and must be reviewed at least every five years. Unlike its predecessor (the Wales Spatial Plan), Future Wales has development plan status. This means it is a material consideration in planning decisions and all Strategic Development Plans (SDPs) and Local Development Plans (LDPs) must be in conformity with it.</p> <p>The purpose of Future Wales is to:</p>	The AoS will need to consider full range of sustainability issues set out in the Plan

	<ul style="list-style-type: none"> - set out where nationally important growth and infrastructure is needed and how the planning system can deliver it; - provide direction for SDPs and LDPs; - support the determination of applications under the Developments of National Significance (DNS) regime; - sit alongside PPW, which provides the context for land use planning; and - support national economic, transport, environmental, housing, energy and cultural strategies and ensure they can be delivered through the planning system. 	
Prosperity for All: A Climate Conscious Wales (2019)	<p>Prosperity for All: A Climate Conscious Wales is our climate change adaptation plan for Wales. The Plan shows how Wales are taking action, over the next five years, to address the areas of greatest risk. The Plan aims to achieve this by:</p> <ul style="list-style-type: none"> • protecting people, communities, buildings and infrastructure from flooding, • protecting water supplies from drought and low river flows, • tackling land management practices that exacerbate climate risks, • managing risks to ecosystems and agricultural businesses. 	Ensure Climate Change adaptation is considered as an objective within the AoS
Adapting to Climate Change: Guidance for Flood and Coastal Erosion Risk Management	<p>This guidance aims to inform the design and resilience of flood and coastal risk management schemes, which should consider credible and reasonable climate change impacts.</p>	Ensure climate change adaptation is considered as an objective within the AoS

Authorities in Wales (2021)		
Flood Consequence Assessments: climate Change Allowances (2016)	When considering new development proposals, Technical Advice Note 15: Development and Flood Risk (TAN15) states that it is necessary to take account of the potential impact of climate change over the lifetime of development. The Flood Consequence Assessment guidance document sets out the climate change allowances that should be used in flood consequence assessments submitted in support of relevant planning applications, and to inform development plan allocations.	No implications: Informative only
The National Flood and Coastal Erosion Risk Management Strategy for Wales (FCERM) (Environment Agency, 2021)	<p>The Flood and Water Management Act 2010 sets out how Welsh Ministers must develop, maintain and apply a National Strategy for Flood and Coastal Erosion Risk Management (FCERM) in Wales.</p> <p>This Strategy sets out how they intend to manage the risks from flooding and coastal erosion across Wales over the next 10 years, whilst strengthening and clarifying roles and responsibilities. It sets out the policies and direction for all Welsh Flood Risk Management Authorities to follow, with measures to explain how this will be achieved, which can be considered as its action plan.</p> <p>The strategy aims to reduce the risk to people and communities from flooding and coastal erosion through five key objectives:</p> <ul style="list-style-type: none"> • Improving our understanding and communication of risk • Preparedness and building resilience • Prioritising investment to the most at risk communities • Preventing more people becoming exposed to risk 	The impacts of energy development on flood risk and the vulnerability of infrastructure to flood risk should be considered. As part of the siting process, flood risk areas should be avoided.

	<ul style="list-style-type: none"> • Providing an effective and sustained response to events 	
Valued and Resilient: The Welsh Government's Priorities for Areas of Outstanding Natural Beauty and National Parks (July 2018)	<p>Designated Landscapes: Valued and Resilient outlines key priority areas following consideration of the outcomes from the Review of Designated Landscapes, Future Landscapes Wales Programme and responses to the Taking forward Wales' sustainable management of natural resources consultation. It provides clarity of purpose for the National Parks and AONBs in the context of the UK's exit from the European Union and at the close of a period of review.</p> <p>It calls on the designated landscapes managing bodies to deliver on a number of Welsh Government priorities, including the Nature Recovery Plan, a refreshed woodland strategy, the decarbonisation agenda, and Cymraeg 2050. Its 10 cross-cutting themes aim to improve resilience and realise the full value of Wales' landscapes:</p> <ul style="list-style-type: none"> • Landscapes for everyone • Exemplars of the sustainable management of natural resources • Halting the loss of biodiversity • Green energy and decarbonisation • Realising the economic potential of landscape • Growing tourism and outdoor recreation • Thriving Welsh language • All landscapes matter • Delivering through collaboration • Innovation in resourcing 	Ensure that the need to improve resilience of National Parks and AONBs designated landscapes is considered.
<i>Scotland</i>		

<p>Scottish Planning Policy (2014)</p>	<p>This document is a statement of the Scottish Government's policy on nationally important land use planning matters.</p> <p>Its purpose is to set out national planning policies which reflect Scottish Ministers' priorities for operation of the planning system and for the development and use of land.</p> <p>The policy offers guidance on a number of topics such as the preparation, content, implementation, monitoring and review of local development plans as well as key issues in the determination of planning applications and appeals.</p> <p>It supersedes a number of Planning Policy Statements including SPP2 Economic Development (2002), SPP7 Planning and Flooding (2004), SPP10 Planning for Waste Management (2007), SPP15 Planning for Rural Development (2005), SPP17 Planning for Transport (2005) and SPP21 Green Belts (2006).</p>	<p>The AoS needs to include a comprehensive set of objectives that promote environmental protection. The timescale over which the impacts of new energy infrastructure will be realised should also be considered.</p>
<p>National Planning Framework 4 (2023)</p>	<p>Sets out Scotland's spatial principles, regional priorities, national developments and national planning policy.</p> <p>Part 1 – A National Spatial Strategy for Scotland 2045</p> <p>Sets out 6 overarching spatial principles which play a key role in delivering UN SDGs and Scottish national outcomes:</p> <ul style="list-style-type: none"> • Just transition • Conserving and recycling assets • Local living • Compact urban growth • Rebalanced development 	<p>The AoS needs to include a comprehensive set of objectives that promote environmental protection.</p>

	<ul style="list-style-type: none"> • Rural revitalisation <p>Part 2 – National Planning Policy</p> <p>Sets out 33 policies on topics including: tackling the climate and nature crises, climate mitigation and action, and biodiversity.</p>	
Scottish Energy Strategy: The Future of Energy in Scotland (2017)	<p>The Strategy sets out the Scottish energy strategy for the period until 2050 and includes 2030 ‘whole-system’ energy targets relating to renewables and energy efficiency. The Strategy is consistent with the Scottish Climate Change Act. The 2050 vision of the Scottish Energy Strategy priorities:</p> <ul style="list-style-type: none"> • Energy efficiency; • Renewable and low carbon solutions; • Consumer engagement and protection; • System security and flexibility; • Innovative local energy systems; and • Strengthening the oil and gas industries. <p>National opposition to new nuclear power is confirmed in the strategy, but it is acknowledged that there is increasing interest in the development of new nuclear technologies. The Strategy is duty bound to assess new technologies and low carbon energy solutions.</p>	There are clear linkages between this strategy and the Energy NPS. The AoS to consider these linkages.
The Nature Conservation (Scotland) Act 2004 (Authorised	This Order describes the types of operations undertaken which affect a site of special scientific interest (SSSI) but which do not require the consent of Scottish Natural Heritage under sections 13 (operations by public bodies etc.) and 16	The AoS should take into account impacts upon habitats and species, and should consider provision for the preservation and protection of

Operations) Order 2011	<p>(operations by owners or occupiers of sites of special scientific interest) of the Nature Conservation (Scotland) Act 2004.</p> <p>The Regulations are of relevance to environmental planning projects as well as remediation projects. Their overall aim is to protect and conserve species in the UK.</p>	biodiversity and the environment.
Scottish Biodiversity Strategy to 2045 (2022)	<p>Sets out the framework for addressing the twin crises of biodiversity loss and climate change.</p> <ul style="list-style-type: none"> • The strategy identifies the vision of a future where Scotland's natural environment is restored and supports thriving communities and wildlife. The strategy proposes outcomes and key actions that will enable this vision to be achieved. 	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.
Wildlife and Natural Environment (Scotland) Act 2011 (as amended)	<p>The Act affected game-shooting, species protection, and introduced new wildlife offences into Scotland such as vicarious liability. Amongst other things it:</p> <ul style="list-style-type: none"> • abolished the designation of areas of special protection for wild birds; • increased regulation of snaring practices; • introduced a closed season for the killing of mountain hares; • introduced a new regime for controlling invasive non-native species; • changed arrangements for deer management and deer stalking; • strengthened badger protection; • required Scottish Ministers to present an annual report to Parliament of offences relating to wildlife crime; • changed the legislation relating to the burning of moorland (muirburn), previously prescribed in the Hill Farming Act 1946; • made operational changes to how Sites of Special Scientific Interest are managed; 	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.

	<ul style="list-style-type: none"> required three-yearly reports to be published by public bodies on compliance with the Biodiversity Duty. 	
The Waste (Scotland) Regulations 2012	<p>These regulations outline and expand on the duty of care responsibilities of businesses with respect to waste they produce.</p> <p>The main compliance actions are as follows:</p> <ul style="list-style-type: none"> Segregate, store and transport your waste appropriately and securely Check that your waste is transported and handled by people or businesses that are authorised to do so Complete waste transfer notes to document all waste you transfer, and keep them as a record for at least two years. Take all reasonable steps to apply the waste management hierarchy before disposing of waste <p>From 1 January 2014, ensure glass, metal, plastic, paper and card is separated for collection. Take steps to avoid cross contamination of these materials</p>	<p>Objectives that promote the reduction of waste sent for disposal and encourage re-use, recycling and recovery of waste should be considered.</p> <p>The AoS should also take account of the fact that in relation to EN-6, radioactive waste will be created which will have to be managed.</p>
The Air Quality Standards (Scotland) Regulations (2010)	<p>Regulations made under powers conferred by section 2(2) of the European Communities Act.</p> <p>It details the limit or target values for several pollutants considered of concern for human health for the purpose of Air Quality Management.</p>	<p>The AoS should seek objectives to avoid air quality impacts. New power stations have the potential to result in emissions to air throughout the project lifecycle.</p>
The Air Quality (Scotland)	<p>The regulations set out the objectives adopted in Scotland for the purpose of Local Air Quality Management.</p>	<p>The AoS should seek objectives to avoid air quality impacts. New power stations have the potential to result in</p>

Amendments Regulations 2016	<p>The achievement or likely achievement of an air quality objective prescribed by the regulations shall be determined by reference to the quality of air at locations;</p> <ul style="list-style-type: none"> • which are situated outside of buildings or other natural or man-made structures; and • where members of the public are regularly present. 	emissions to air throughout the project lifecycle.
Cleaner Air for Scotland – the Road to a healthier future (the Scottish Government 2015)	<p>The purpose of Cleaner Air for Scotland – The Road to a Healthier Future (CAFS) is to provide a national framework which sets out how the Scottish Government and its partner organisations propose to achieve further reductions in air pollution and fulfil legal responsibilities as soon as possible.</p>	The AoS should seek objectives to avoid air quality impacts. New power stations have the potential to result in emissions to air throughout the project lifecycle.
Contaminated Land (Scotland) Regulations (2000 and 2005)	<p>Regulations made to ensure the proper management and remediation of contaminated land which is causing or has the potential to cause significant harm or significant pollution of the water environment.</p> <p>These have been produced by Scottish Ministers in exercise of powers under the Environmental Protection Act (1990). Topics covered include pollution of controlled waters, remediation notices and appeals to Scottish Ministers.</p>	Elements of energy infrastructure has the potential to lead to land contamination and appropriate consideration should be given to potential impacts and how they can be addressed.
Environmental Noise (Scotland) Regulations (2006) as amended by The	<p>The Environmental Noise (Scotland) Regulations 2006 introduced strategic noise mapping and noise action planning for areas such as large urban areas and major transport corridors.</p>	New energy infrastructure could result in noise disturbance to local populations as a result of the

<p>Environmental Noise (Scotland) Amendment Regulations 2018</p>	<p>It is stated that Scottish Ministers must prepare Strategic Noise Maps and Noise Action Plans which identify Quiet Areas and areas where management of noise is required- identified as Noise Management Areas (NMAs). The Noise Action Plans must include measures to manage noise.</p>	<p>movement of construction traffic and construction works. During the operation of the facilities there would also be operational noise generated by traffic and machinery. Furthermore, noise would also be generated during decommissioning works. Noise and vibration impacts should, therefore, be considered in the AoS.</p>
<p>Climate Change (Scotland) Act 2009</p>	<p>An Act of the Scottish Parliament to set a target for the year 2050, an interim target for the year 2020, and to provide for annual targets, for the reduction of greenhouse gas emissions; to provide about the giving of advice to the Scottish Ministers relating to climate change; to confer power on Ministers to impose climate change duties on public bodies; to make further provision about mitigation of and adaptation to climate change; to make provision about energy efficiency, including provision enabling council tax discounts; to make provision about the reduction and recycling of waste; and for connected purposes.</p>	<p>Development of renewable generation would reduce reliance on non-renewable sources of power that lead to high levels of greenhouse gas emissions.</p> <p>Objectives should seek to reduce greenhouse gas emissions during other stages of energy infrastructure development, for example, the transportation of raw materials and waste.</p>

		The AoS should consider objectives which improve the resilience of energy infrastructure to changing climatic conditions throughout the project's lifecycle.
The Smoke Control Areas (Authorised Fuels) Scotland Regulations 2014	<p>The Regulations provide a list of fuels which are authorised to be used in smoke control areas in Scotland.</p> <p>The compliance actions are as follows:</p> <p>If located in a smoke control area, ensure that only the following fuels are used:</p> <ul style="list-style-type: none"> • Anthracite; • Semi-anthracite; • Electricity; • Gas; • Low volatile steam coals; and • Fuels described in the Schedule to these regulations. <p>The overall purpose of the Regulations is to improve air quality.</p>	New power stations have the potential to result in emissions to air throughout the project lifecycle. Objectives which encourage protection of air quality should be considered.
Climate Ready Scotland Scottish Climate Change Adaptation	The second Scottish Climate Change Adaptation Programme sets out policies and proposals to prepare Scotland for the challenges that will be faced as our climate continues to change in the decades ahead. The Programme is a requirement of the Climate Change (Scotland) Act 2009 and addresses the risks set out in the UK	Development of new energy infrastructure needs to be undertaken with consideration of climate change throughout the project lifecycle.

<p>Programme (2019-2024)</p>	<p>Climate Change Risk Assessment (UK CCRA) 2017, published under section 56 of the UK Climate Change Act 2008.</p> <p>The Programme takes an outcomes-based approach, derived from both the UN Sustainable Development Goals and Scotland's National Performance Framework. There are seven outcomes in the programme:</p> <ul style="list-style-type: none"> • Outcome 1: Our communities are inclusive, empowered, resilient and safe in response to the changing climate • Outcome 2: The people in Scotland who are most vulnerable to climate change are able to adapt and climate justice is embedded in climate change adaptation policy • Outcome 3: Our inclusive and sustainable economy is flexible, adaptable and responsive to the changing climate. • Outcome 4: Our society's supporting systems are resilient to climate change • Outcome 5: Our natural environment is valued, enjoyed, protected and enhanced and has increased resilience to climate change • Outcome 6: Our coastal and marine environment is valued, enjoyed, protected and enhanced and has increased resilience to climate change • Outcome 7: Our international networks are adaptable to climate change 	<p>Objectives should seek to ensure that development is resilient and adaptable to the impacts of climate change, throughout the project lifecycle.</p>
<p>Climate Change (Emissions Reduction Targets) (Scotland) Act 2019</p>	<p>The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, which amends the Climate Change (Scotland) Act 2009, sets targets to reduce Scotland's emissions of all greenhouse gases to net-zero by 2045 at the latest, with interim targets for reductions of at least 56% by 2020, 75% by 2030, 90% by 2040.</p>	<p>Objectives should seek to reduce greenhouse gas emissions during other stages of energy infrastructure development, for example, the transportation of raw materials and waste.</p>

	<p>The Act embeds the principles of a Just Transition, which means reducing emissions in a way which tackles inequality and promotes fair work, at the heart of Scotland's approach to reaching net-zero.</p>	<p>The AoS should consider objectives which improve the resilience of energy infrastructure to changing climatic conditions throughout the project's lifecycle.</p>
<p>The Water Environment (Controlled Activities) (Scotland) Regulations 2011</p>	<p>The Regulations– more commonly known as the Controlled Activity Regulations (CAR) – and their further amendments apply regulatory controls over activities which may affect Scotland's water environment. This includes:</p> <ul style="list-style-type: none"> • groundwater, • wetlands (directly associated with surface and groundwater bodies); • rivers; • lochs; • transitional waters (estuaries and saline lagoons); and • coastal waters (3nm from territorial baseline). <p>The controlled activities include:</p> <ul style="list-style-type: none"> • abstractions from surface and groundwater; • impoundments of rivers, lochs, wetlands and transitional waters; • groundwater recharge; • engineering in rivers, lochs and wetlands; • engineering activities in the vicinity of rivers, lochs and wetland which are likely to have a significant adverse impact upon the water environment; • activities liable to cause pollution; • direct or indirect discharge of List I substances to groundwater; • any other activities which directly or indirectly is liable to cause a significant 	<p>Power stations require water abstractions and discharges and have the potential to have significant adverse effects to water environments. The AoS should consider objectives which focus on the protection of all aspects of the water environment.</p>

	<ul style="list-style-type: none"> • adverse impact upon the water environment. <p>In order to ensure proportionate controls over activities, the Regulations provide for three levels of control: General Binding Rules (GBR), Registrations and Water Use Licences. SEPA can move activities between registration and licences and from GBR to registration or licences as it considers necessary in order to protect the water environment.</p>	
2020 Challenge for Scotland's Biodiversity - A Strategy for the conservation and enhancement of biodiversity in Scotland	<p>The purpose of this strategy is to conserve and enhance biodiversity in Scotland. It identifies the role of Scotland's natural assets in contributing to sustainable economic growth and in supporting wellbeing and wealth creation.</p> <p>There are three central aims of the 2020 challenge:</p> <ul style="list-style-type: none"> • Protect and restore biodiversity on land and in our seas, and to support healthier ecosystems. • Connect people with the natural world, for their health and wellbeing and to involve them more in decisions about their environment. • Maximise the benefits for Scotland of a diverse natural environment and the services it provides, contributing to sustainable economic growth. 	New energy infrastructure has the potential to adversely affect wildlife and habitats if they are developed inappropriately. Objectives which promote the protection of the natural environment and biodiversity should, therefore, be included in the AoS.
Tourism Development Framework for Scotland (2016)	<p>This Framework has been prepared to support the aim of increasing sustainable economic growth in the visitor economy being promoted by the planning system at the national level – Scottish Planning Policy and the National Planning Framework – and help development planning authorities to develop their own strategies to grow the visitor economy in their local areas.</p> <p>The primary purpose of this Framework is to:</p> <ul style="list-style-type: none"> • Provide guidance to planning authorities to help secure growth in the visitor economy 	New energy infrastructure development will provide employment and contribute towards economic growth for Scotland, but consideration should be made of potential impact on the tourism industry.

	<ul style="list-style-type: none"> • Highlight future opportunities for investment and development to all councils and other stakeholders • Promote actions needed to support growth in a structured and consistent manner to the Scottish planning system. 	
Scotland's Zero Waste Plan (2010)	<p>The plan sets the strategic direction for waste policy for Scotland, informed by improved understanding of the environmental consequences of how we use and dispose of resources, and by the requirements of European legislation. The Zero Waste Plan is underpinned by a determination to achieve the best overall outcomes for Scotland's environment, by making best practical use of the approach in the waste management hierarchy: waste prevention, reuse, recycling and recovery.</p> <p>This Zero Waste Plan is deliberately concise and strategic in its approach. It looks to set the goals Scotland needs to achieve in the future, and focuses on the key areas of activity with the potential to make the greatest contribution to deliver those goals. At the heart of the Zero Waste Plan is a change of mindset, a need for every one of us to start viewing waste as a potential resource and to think about how to use that resource most efficiently.</p>	The AoS should consider waste recycling from the construction and operation of energy infrastructure.
Scotland's Forestry Strategy 2019-2029	<p>This Strategy provides an overview of contemporary Scottish forestry, presents a 50-year vision for Scotland's forests and woodlands, and sets out a 10-year framework for action.</p> <p>Objectives</p> <ul style="list-style-type: none"> • Increase the contribution of forests and woodlands to Scotland's sustainable and inclusive economic growth • Improve the resilience of Scotland's forests and woodlands and increase their contribution to a healthy and high quality environment 	The siting of new energy infrastructure has the potential to impact upon areas of woodland. The AoS framework should consider objectives which focus upon environmental protection and

	<ul style="list-style-type: none"> • Increase the use of Scotland's forest and woodland resources to enable more people to improve their health, well-being and life chances <p>Priorities</p> <ul style="list-style-type: none"> • Ensuring forests and woodlands are sustainably managed • Expanding the area of forests and woodlands, recognising wider land-use objectives • Improving efficiency and productivity, and developing markets • Increasing the adaptability and resilience of forests and woodlands • Enhancing the environmental benefits provided by forests and woodlands • Engaging more people, communities and businesses in the creation, management and use of forests and woodlands 	the avoidance of loss of forests.
Forestry and Land Management (Scotland) Act 2018	<p>The Forestry and Land Management (Scotland) Act 2018 makes new provisions regarding Scottish Ministers' functions in relation to forestry.</p> <p>The Act sets out the following, among other things;</p> <ul style="list-style-type: none"> • a duty to prepare a forestry strategy; • a duty to promote sustainable forest management; and • permissions and rules regarding felling. 	The siting of new energy infrastructure has the potential to impact upon areas of woodland. The AoS framework should consider objectives which focus upon environmental protection and the avoidance of loss of forests.
Flood Risk Management Act (Scotland) 2009	The Flood Risk Management (Scotland) Act 2009 introduced a more sustainable and modern approach to flood risk management. It designated all local authorities, SEPA, Scottish Water and Scottish Ministers, as 'Responsible Authorities', and laid the duty upon them to work to reduce flood risk. It placed a great deal of	Ensure that flood risk is included as an objective within the AoS framework.

	emphasis on the importance of partnership working and co-operation among authorities to help achieve the goal of reducing flood risk.	
Forestry (Felling) (Scotland) Regulations 2019	The Regulations set out the process for applications for felling permission, directions for restocking, directions for felling and rules surrounding appeals and compensation.	The siting of new energy infrastructure has the potential to impact upon areas of woodland. The AoS framework should consider objectives which focus upon environmental protection and the avoidance of loss of forests.
Control of Woodland Removal 2012	At a national scale Scotland is continuing to expand its woodland resource, to counteract historic deforestation. The Scottish Government has developed a policy on the control of woodland removal to provide direction for decisions on woodland removal in Scotland.	The siting of energy infrastructure has the potential to impact upon areas of woodland. The AoS should consider environmental protection and the potential impacts on forests.
The Town and Country Planning (Tree Preservation Order and Trees in Conservation Areas)	The regulations are made under the powers conferred on the Secretary of State by sections 160(8), 161(3) and (4), 173 and 275 of the Town and Country Planning (Scotland) Act.	The AoS will need to consider potential impacts on important trees.

(Scotland) Regulations 2010	<p>The Regulations require an application to be made for cutting down, topping, lopping or uprooting of any tree with a tree preservation order or within a Conservation Area. This application must:</p> <ul style="list-style-type: none"> • specify the operations for which consent is sought; • give reasons for carrying out such operations; • identify the protected tree or trees which would be affected by such operations; and • The protected tree or trees must be identified by means of a map or plan of a size and scale sufficient for the purpose. 	
Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017	<p>Environmental Impact Assessment (EIA) is a means of drawing together, in a systematic way, an assessment of the likely significant environmental effects arising from a proposed development.</p>	<p>Energy infrastructure has the potential to fall under Schedule 1 and 2 developments in the EIA 2011 regulations and therefore would be subject to an Environmental Impact Assessment.</p>
The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013	<p>This Order provides for procedures connected with Pre-application consultation, applications for planning permission, the planning authority, consultations, local development orders, certificates of lawful use or development and the maintenance of registers of planning applications.</p>	<p>New energy infrastructure has the potential to have wide-ranging environmental impacts, depending upon location. Objectives which seek to protect the environment as a result of</p>

		development should be considered.
Planning Advice Note (PAN) 3/2010 Community Engagement	Sets out effective community engagement in the planning process.	The AoS process should consider objectives which include effective community engagement in the planning process.
PAN 33 Development of Contaminated Land (Revised Oct 2000)	<p>Sets out the role of the planning system in addressing historical contamination. It considers:</p> <ul style="list-style-type: none"> • The implications of the new contaminated land regime for the planning system; • the development of contaminated land; • the approach to contaminated land in development plans; • the determination of planning applications when the site is or may be contaminated, and; • where further information and advice can be found. 	<p>The AoS should consider objectives which address the assessment and use of contaminated land sites.</p> <p>Contaminated land sites may be suitable for the development of energy infrastructure if appropriate management measures are implemented.</p>
PAN 51 Planning, Environmental Protection and Regulation (Revised 2006)	Supports the existing policy role of the planning system in relation to the environmental protection regimes.	The AoS should consider a comprehensive set of objectives that promote environmental protection such that they complement environmental targets and

		positively work towards their achievement.
PAN 2/2011 Planning and Archaeology	This PAN is intended to inform the day-to-day work of a range of local authority advisory services and other organisations that have a role in the handling of archaeological matters within the planning process.	The AoS should consider archaeology through the inclusion of an objective relating to the historic environment.
PAN 71 Conservation Area Management	This PAN complements existing national policy and provides further advice on the management of conservation areas. It identifies good practice for managing change, sets out a checklist for appraising conservation areas and provides advice on funding and implementation.	The AoS should take into account the potential impact of development in Conservation Areas.
PAN 60 Planning for Natural Heritage	This PAN provides advice on how development and the planning system can contribute to the conservation, enhancement, enjoyment and understanding of Scotland's natural environment and encourages developers and planning authorities to be positive and creative in addressing natural heritage issues.	<p>Natural heritage should be considered in the AoS and the framework should include objectives to conserve and safeguard native species, wildlife habitats, ecosystems, geology and natural beauty and amenity of the countryside.</p> <p>If inappropriately developed, energy infrastructure could potentially impact upon</p>

		natural heritage both directly (e.g. land take) and indirectly (e.g. as a result of increased water abstraction).
PAN 1/2011 Planning and Noise	This PAN provides advice on the role of the planning system in helping to prevent and limit the adverse effects of noise.	Energy infrastructure sites have the potential to generate increases in noise. The AoS should consider objectives which address noise impacts during construction, operation and decommissioning.
PAN 61 Waste Management Planning	<p>The purpose of this PAN is to:</p> <ul style="list-style-type: none"> • Provide advice on a sustainable approach and change of emphasis from waste disposal to integrated waste management; • Assist planning authorities in ensuring that development plans reflect the land use requirements for the delivery of an integrated network of waste management facilities; • Provide a basis for more informed consideration of development proposals for waste management facilities; • Enable planning authorities to implement the emerging and future Area Waste Plans; and • Provide developers seeking planning permission for waste management facilities with advice on the issues taken into consideration when determining applications. 	The development and operation of energy facilities would generate waste and potentially increase the amount of waste needing long-term disposal.

Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update	<p>This update to Scotland's 2018-2032 Climate Change Plan sets out the Scottish Government's pathway to the new and ambitious targets set by the Climate Change Act 2019. It is a key strategic document on the green recovery from COVID-19. The Government have committed to reduce emissions by 75% by 2030 (compared with 1990) and to net zero by 2045</p> <p>Part 1 of the Update sets out the progress that is being made in delivering the commitments and the further actions to be taken to secure a green recovery from the COVID-19 pandemic. Part 2 of the update is dedicated to the 'Coordinated Approach' to meeting the emissions reduction targets. This section looks at how to take a cross-cutting, systems based approach that harnesses opportunities for inclusive jobs, growth and well-being.</p>	<p>Development of new energy infrastructure needs to be undertaken with consideration of climate change throughout the project lifecycle.</p> <p>Objectives should seek to ensure that development is resilient and adaptable to the impacts of climate change, throughout the project lifecycle.</p>
Flood Risk Management Act (Scotland) (2009)	<p>This act introduced a more coordinated and sustainable approach to flood risk management. The Act establishes a framework for the assessment and sustainable management of flood risk with the aim of reducing the adverse consequences of flooding from all sources. The FRM Act places a general duty on Scottish Ministers, SEPA and responsible authorities (including local and national park authorities) to exercise their flood risk related functions with a view to reducing overall flood risk.</p>	<p>The development of new energy infrastructure needs to be considered in the context of flooding. Such development has the potential to affect the local and wider flood regime.</p>
<i>Northern Ireland</i>		
Environment Strategy for Northern Ireland 2023	<p>The Environment Strategy sets out Northern Ireland's environmental priorities for the coming decades and forms part of the Executive's Green Growth agenda. As such it includes a mix of both existing and new environmental targets / objectives</p>	<p>The AoS should acknowledge that Northern Ireland has this new Environment Strategy.</p>

	for the Department of Agriculture, Environment and Rural Affairs (DAERA) and all Northern Ireland Departments with a role in improving the environment.	
Marine Plan for Northern Ireland 2022	<p>The Marine Plan provides a framework of policies to be considered by public authorities taking decisions which affect or might affect the marine area through decision making processes. It is a material consideration in this regard. The Marine Plan (when adopted) will be used by Public Authorities in taking decisions which affect or might affect the marine area, including:</p> <ul style="list-style-type: none"> e. Authorisation or enforcement decisions f. Decisions that relate to the exercise of any function capable of affecting the marine area. <p>It is a single document made up of two plans, one for the inshore region and one for the offshore region. The inshore region extends from the Mean High Water Spring Tide mark out to, at most, 12 nautical miles (nm) and includes tidal rivers and sea loughs. The offshore region is the area that extends south-eastwardly from the 12nm territorial limit to the outer boundary of the Northern Ireland marine area (31nm at the farthest point).</p>	Development of certain new energy infrastructure may result in transboundary effects in Northern Ireland's marine environment which will need to be considered by the AoS.
The Path to Net Zero Energy: Secure, Affordable, Clean 2021	<p>The aim of the strategy is to ensure that energy in Northern Ireland is secure, affordable and clean now and in future. The strategy sets the following three targets:</p> <ol style="list-style-type: none"> 1. Deliver energy efficiency savings of 25% from buildings and industry by 2030. 2. Meet at least 70% of electricity consumption from a diverse mix of renewable sources by 2030. 3. Double the size of Northern Ireland's low carbon and renewable energy economy to a turnover of more than £2B by 2030. 	The AoS should note that Northern Ireland is on a path to clean energy now and in the future which excludes generation of nuclear energy within its boundaries.

	<p>The strategy centres around five key principles:</p> <ol style="list-style-type: none"> 1. Placing people at the heart of energy future 2. Grow the green economy 3. Do more with less 4. Replace fossil fuels with renewable energy 5. Create a flexible, resilient and integrated energy system <p>The strategy does not include consideration of nuclear power.</p>	
Climate Change Act (Northern Ireland) 2022	Sets targets for the years 2030, 2040 and 2050 for the reduction of greenhouse gas emissions. Provides a system for carbon budgeting and reporting against targets and budgets.	AoS objectives should seek to ensure that development is resilient and adaptable to the impacts of climate change, throughout the project lifecycle.

Appendix D. Baseline Data and contextual information

Sustainability Topic / Baseline	England	Scotland	Wales	Northern Ireland
Climate Change:	As of 2021, UK total net GHG emissions= 426.51 MtCO ₂ e ²			
Regional distribution of net greenhouse gas emissions	As of 2021, England net GHG emissions were 315.32 MtCO ₂ e and had approximately 73.9% share of total net GHG emissions.	As of 2021, Wales net GHG emissions were 35.98 MtCO ₂ e and had approximately 8.4% share of total net GHG emissions.	As of 2021, Scotland net GHG emissions were 40.91 MtCO ₂ e and had approximately 9.6% share of total net GHG emissions.	As of 2021, Northern Ireland net GHG emissions were 22.46 MtCO ₂ e and had approximately 5.3% share of total net GHG emissions.
	Supporting Trend Data: UK GHG emissions decreased overall from 1990 to 2021 driven largely by a switch from using coal and heavy-emitting fuels in the energy supply and manufacturing industries to lower emission fuels such as natural gas and, more recently, renewable sources. Household emissions that come from heating homes and travelling, for commuting, social, domestic or leisure purposes, have been the largest contributor since 2015 as the emissions from energy supply decreased ³ . In 2019, net territorial emissions in the UK of the basket of seven greenhouse gases covered by the Kyoto Protocol were estimated to be 454.8 million tonnes carbon dioxide equivalent (MtCO ₂ e), a decrease of 2.8% compared to the 2018 figure of 468.1 million tonnes and 43.8% lower than they were in 1990 ⁴ . In 2020, net territorial greenhouse gas emissions in the UK were estimated to be 405.5 million tonnes carbon dioxide equivalent (MtCO ₂ e), a decrease of 9.5% compared to the 2019 figure of 447.9 million tonnes and 49.7% lower than they were			

² National Atmospheric Emissions Inventory (2021) *Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990-2021*. Available: https://naei.beis.gov.uk/reports/reports?report_id=1110

³ <https://climate-change.data.gov.uk/dashboards/emissions>

⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/957887/2019_Final_greenhouse_gas_emissions_statistical_release.pdf

in 1990. The coronavirus (COVID-19) pandemic and the resulting restrictions introduced in 2020 across the UK had major impacts on various aspects of society and the economy, which led to a significant decrease in GHG emissions⁵.

In 2021, net territorial GHG emissions in the UK were estimated to be 426.5 million tonnes carbon dioxide equivalent (MtCO₂e), an increase of 5.0% from the 2020 figure of 406.3 million tonnes, but still 5.3% lower than in 2019, the most recent pre-pandemic year⁶.

Provisional figures for 2022 show that despite rises in some emissions as the UK continued to recover from the COVID-19 pandemic, 2022 saw another fall in GHG emissions, largely due to a reduction in fuel use to heat buildings. This will largely be because 2022 was considerably warmer than 2021 and higher energy prices may also have been a factor, particularly towards the end of the year. Total GHG emissions are estimated to have decreased by 2.2% to 417.1 million tonnes carbon dioxide equivalent (MtCO₂e) compared to 2021. Compared to 2019, the most recent pre-pandemic year, 2022 CO₂ emissions are down 7.5% and total GHG emissions are down 7.4%. Total GHG emissions were 48.7% lower than they were in 1990⁷.

Emissions of CO₂ are by far the largest component of total UK GHG emissions, of which the largest sources are power generation and road transport. Emissions have reduced from 1990 due to fuel switching, structural change, and improvements in end-use efficiency. The strong link between power generation and CO₂ emissions means that short term trends can be dominated by UK temperatures. In cold years like 1996 and 2010 there was an increase in demand for power for heating and in warm years like 2011 and 2014 there was a decrease. The second most important source of greenhouse gases is methane (CH₄). Annual emissions of CH₄ have reduced by over half since 1990. The main sources of CH₄ are agriculture, waste disposal, leakage from the gas distribution system and coal mining. Reductions in CH₄ emissions in the UK are driven by the increased utilisation of methane from landfills, a large decline in UK coal mining, investment in improvements to the natural gas supply infrastructure to reduce leakage and a reduction in livestock numbers. Emissions of nitrous oxide (N₂O) have also reduced by over half since 1990. Most N₂O emissions are generated from the agriculture sector, Agriculture sector N₂O emissions have decreased primarily due to reduced emissions from synthetic fertiliser application. N₂O is also released during the production of nitric and adipic acid, a significant source in 1990 contributing to approximately half of all N₂O emissions. Due to a decline in production together with the installation of abatement equipment, the Industrial Processes and Other Product Use (IPPU) sector now only contribute around 4% of N₂O emissions. The smallest percentage reduction in emissions across the time series is for the F gases: HFCs, PFCs, NF₃ and SF₆. F-gas emissions have decreased since 1995, due mainly to the fall in F gas manufacture in the UK and the installation of abatement equipment at two of the three UK manufacturers. These

⁵ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1051408/2020-final-greenhouse-gas-emissions-statistical-release.pdf

⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1134664/greenhouse-gas-emissions-statistical-release-2021.pdf

⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147372/2022_Provisional_emissions_statistics_report.pdf

	emission reductions have been to some extent offset by the increases in the use of HFCs as substitutes for ozone depleting substances, particularly in refrigeration and air conditioning ⁸ .			
Climate change: Contribution of sectors to greenhouse gas emissions	As of 2021, the UK total net GHG emissions per sector in England were ⁹ : Agriculture: 47,906.21 ktCO ₂ e Business: 73,317.19 kt CO ₂ e Energy supply: 86,883.19 ktCO ₂ e Industrial processes: 10,299.85 ktCO ₂ e Public: 7,515.38 ktCO ₂ e Residential: 69,398.95 ktCO ₂ e Transport: 109,452.95 ktCO ₂ e Waste: 18,662.14 ktCO ₂ e Land Use, Land Use Change and Forestry (LULUCF): 1083.15 ktCO ₂ e			
	As of 2021, the total net GHG emissions per sector in England were: Agriculture: 28,145.42 ktCO ₂ e Business: 55,627.84 kt CO ₂ e Energy supply: 57,790.03 ktCO ₂ e	As of 2021, the total net GHG emissions per sector in Wales were: Agriculture: 5,736.96 ktCO ₂ e Business: 8,808.41 ktCO ₂ e Energy Supply: 9,323.49 ktCO ₂ e Industrial processes: 2,272.75 ktCO ₂ e	As of 2021, the total net GHG emissions per sector in Scotland were: Agriculture: 7,825.66 ktCO ₂ e Business: 7,730.34 ktCO ₂ e Energy Supply: 4,850.48 ktCO ₂ e Industrial: 440.00 ktCO ₂ e	As of 2021, the total net GHG emissions per sector in Northern Ireland were ¹⁰ : Agriculture: 6,198.17 ktCO ₂ e Business: 3,150.58 ktCO ₂ e Energy Supply: 3,084.06 ktCO ₂ e Industrial: 228.60 ktCO ₂ e Public: 138.76 ktCO ₂ e

⁸ [UK Greenhouse Gas Inventory, 1990 to 2021 \(defra.gov.uk\)](https://defra.gov.uk)

⁹ National Atmospheric Emissions Inventory (2021) *Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990-2021*. Available: https://naei.beis.gov.uk/reports/reports?report_id=1110

¹⁰ National Atmospheric Emissions Inventory (2021) *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2021*. Available: https://naei.beis.gov.uk/reports/reports?report_id=1110

	Industrial processes: 7,358.50 ktCO ₂ e Public: 6,124.00 ktCO ₂ e Residential: 56,575.14 ktCO ₂ e Transport: 89,324.20 ktCO ₂ e Waste: 15,220.85 ktCO ₂ e LULUCF: - 848.91 ktCO ₂ e	Public: 334.75 ktCO ₂ e Residential: 3,728.63 ktCO ₂ e Transport: 5,420.60 ktCO ₂ e Waste: 1,104.33 ktCO ₂ e LULUCF: - 752.04 ktCO ₂ e	Public: 917.88 ktCO ₂ e Residential: 6298.90 ktCO ₂ e Transport: 10,948.73 ktCO ₂ e Waste: 1,545.09 ktCO ₂ e LULUCF: 358.17 ktCO ₂ e	Residential: 2,787.27 ktCO ₂ e Transport: 3,754.35 ktCO ₂ e Waste: 791.87 ktCO ₂ e LULUCF: 2,325.92 ktCO ₂ e
<p>Supporting Trend Data:</p> <p>As of 2021, emissions in the agricultural sector accounted for 11% of UK total net GHG emissions and have declined from 54 MtCO₂e in 1990 to 48 MtCO₂e in 2021 (-16%).</p> <p>As of 2021, emissions in the business sector accounted for 17% of UK total net GHG emissions and have declined from 113 MtCO₂e in 1990 to 74 MtCO₂e in 2021 (-35%).</p> <p>As of 2021, emissions in the energy supply sector accounted for 20% of UK total net GHG emissions and have declined from 284 MtCO₂e in 1990 to 87 MtCO₂e in 2021 (-69%).</p> <p>As of 2021, emissions in the industrial processes sector accounted for 2.5% of UK total net GHG emissions and have declined from 56 MtCO₂e in 1990 to 10 MtCO₂e in 2021 (-82%).</p> <p>As of 2021, emissions in the public sector accounted for 1.8% of UK total net GHG emissions and have declined from 16 MtCO₂e in 1990 to 7.5 MtCO₂e in 2020 (-53%).</p> <p>As of 2021, emissions in the residential sector accounted for 16% of UK total net GHG emissions and have declined from 80 MtCO₂e in 1990 to 67 MtCO₂e in 2021 (-16%).</p> <p>As of 2021, emissions in the transport sector accounted for 26% of UK total net GHG emissions and have declined from 128 MtCO₂e in 1990 to 110 MtCO₂e in 2021 (-14%).</p> <p>As of 2021, emissions in the waste sector accounted for 4.5% of UK total net GHG emissions and have declined from 72 MtCO₂e in 1990 to 18 MtCO₂e in 2021 (-75%).</p> <p>As of 2021, emissions in the LULUCF sector accounted for 0.25% of UK total net GHG emissions and have declined from 11 MtCO₂e in 1990 to 1 MtCO₂e in 2021 (-90%).</p>				

Climate change: Climate Projections	<p>The UK Climate Projections (UKCP18) and the State of the UK Climate reports (published annually) identify the following observed trends which are attributed to climate change¹¹:</p> <ul style="list-style-type: none"> • The temperature in the UK in the most recent decade (2008-2017) has been on average 0.3 °C higher than the 1981-2010 average and 0.8 °C higher than the 1961-1990, with all of the top 10 warmest years occurring since 1990¹². • The sea surface temperature around the UK coast for the most recent decade, 2008-2017, is 0.6 °C higher¹³ than the 1961-1990 average. • Over the last 250 years in England and Wales, there has also been a slight trend for increased rainfall in winter and decreased rainfall in summer. • All regions of the UK have experienced an increase in the amount of winter rain that falls in heavy downpours. • Sea levels around the UK have risen by about 1mm/a year over the 20th century, although recent rates are slightly higher than this. Note that sea level rise will not be at a constant rate around the coast – local geomorphological conditions will dictate precise levels. <p>The UKCP18 projects the following changes within the UK by the 2080-2099 decades, relative to a 1981-2000 baseline, with a medium emissions scenario¹⁴:</p> <ul style="list-style-type: none"> • Average summer temperatures across the UK will increase by 1.2 – 4.5 °C ; • Average summer rainfall will likely decrease, with projections ranging between -46 – +2%; • Average winter rainfall will likely increase, with projections ranging between -9 – +38%, and; • Sea levels in London will rise by 60 cm. <p>To provide context of how climate change may be manifested in individual regions, taking the north west region as an example, significant impacts across a range of sectors including health, infrastructure, economy and biodiversity are anticipated as a result of future changes in climate. Specifically, cold related illnesses and mortality are likely to decrease due to milder winter</p>
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¹¹ Lowe, J. A., et al. (2018): UK Climate Projections 18 Science Overview Report, Met Office, Exeter, UK. Available:

<https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Overview-report.pdf>

¹² Murphy, J.M., et al. (2018): UK Climate Projections 18 Land Projections: Science Report, *Met Office, Exeter, UK*. Available:

<https://www.metoffice.gov.uk/pub/data/weather/uk/ukcp18/science-reports/UKCP18-Land-report.pdf>

¹³ Kendon, M., McCarthy, M., Jevrejeva, S., Matthews, A., and Legg, T. (2018): State of the UK Climate 2018, *International Journal of Climatology*, 38(S2).

Available: <https://rmetsonline.wiley.com/toc/10970088/2018/38/S2>

¹⁴ Palmer, M., et al. (2018): UK Climate Projections 18 Marine Report, Met Office, Exeter, UK. Available:

<https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-marine-report-updated.pdf>

however, the number of incidents of food poisoning, heat stress and heat related deaths may increase in summer. Domestic energy use may decrease in winter due to higher temperatures however it may increase during summer months as refrigeration and air conditioning demand increases. Wetter winters and more intense rainfall events throughout the year may result in a higher risk of flooding from rivers.

National key findings for temperature, precipitation and sea level rise for the different emissions scenarios are also detailed within UKCP18 as follows:

Variable	Annual Temperature Change (°C)					Winter precipitation change (%)					Summer precipitation change (%)				
Percentile	5 th	10 th	50 th	90 th	95 th	5 th	10 th	50 th	90 th	95 th	5 th	10 th	50 th	90 th	95 th
High emissions	0.7	0.9	1.8	2.7	3.0	-5	-5	7	21	25	-35	-31	-15	0	3
Medium emissions	0.5	0.7	1.4	2.3	2.5	-10	-7	4	17	21	-30	-26	-13	2	6
Low emissions	0.3	0.5	1.2	2.0	2.3	-8	-5	5	16	19	-28	-24	-11	1	5

	5 th	Central	95 th
High emissions	53	84	115
Medium emissions	37	60	83
Low emissions	29	49	70

UKCP18 absolute time mean sea level change (cm) projections over the 21st century in London under 3 different scenarios, with 5th and 95th percentile confidence intervals. The changes are given for the year 2100 relative to the 1981-2000 average.

Biodiversity and Ecosystems: Special Protection Areas (SPAs)	SPAs are strictly protected sites classified in accordance with Article 4 of the <u>EC Birds Directive</u> , which came into force in April 1979. They are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species ¹⁵ .			
	SPAs are of national and international conservation importance. The locations of SPAs are shown in Figure 1.			
	As of October 2019 there were 82 Classified SPAs in England, covering an area of 860,495 ha. There is one site crossing the England / Scotland border (43,710 ha), two across the England / Wales border (38,810 ha), two classified as England / offshore (745,722 ha) and one classified as England / Wales / Offshore (252,311 ha) ¹⁶ . SPAs in England are predominantly located in coastal and estuarine areas, with various sites distributed inland. Currently, there are 46 SPAs with marine components designated partly or wholly within English waters. A total of 3 SPAs with marine components are	As of October 2019 there were 152 Classified SPAs in Scotland, covering an area of 1,205,855 ha. There is also one site crossing the England / Scotland border (43,710 ha) ¹⁷ . SPAs are distributed widely throughout Scotland, with large concentrations in coastal and estuarine areas, islands and uplands.	As of October 2019 there were 17 Classified SPAs in Wales, covering an area of 259,855 ha. There are also two sites crossing the England / Wales border (38,810 ha), one classified as England / Wales / Offshore (252,311 ha) and one classified as Wales / Offshore (249,390 ha) ¹⁸ . SPAs are located in coastal and estuarine areas of Wales, with several situated in the central and northern highlands. Currently, there are 10 SPAs with marine components designated partly or wholly within Welsh waters.	As of October 2019 there were 16 Classified SPAs in Northern Ireland, covering an area of 113,988 ha ¹⁹ . SPAs in Northern Ireland are primarily located in coastal and estuarine areas.

¹⁵ Joint Nature Conservation Committee (2013) *Special protection Areas*. Available: <http://jncc.defra.gov.uk/page-162>.

¹⁶ Joint Nature Conservation Committee (2016) *Classified Special Protection Areas (SPAs) in the UK*. Available: <http://jncc.defra.gov.uk/page-1399>.

¹⁷ Joint Nature Conservation Committee (2016) *Classified Special Protection Areas (SPAs) in the UK*. Available: <http://jncc.defra.gov.uk/page-1399>.

¹⁸ Joint Nature Conservation Committee (2016) *Classified Special Protection Areas (SPAs) in the UK*. Available: <http://jncc.defra.gov.uk/page-1399>.

¹⁹ Joint Nature Conservation Committee (2016) *Classified Special Protection Areas (SPAs) in the UK*. Available: <http://jncc.defra.gov.uk/page-1399>.

	located within both English and Welsh waters.			
	<p>Supporting Trend Data:</p> <p>In the UK, the first SPAs were identified and classified in the early to mid-1980s. Classification has since progressed, with regular updating of both the number of classified SPAs and those that are in process of being classified (pSPA).</p> <p>In response to stakeholder consultation, the Department for Environment, Food and Rural Affairs (Defra) convened an advisory group to take forward further consideration of SPA network development. The Third SPA Network Review, published in 2016, focused largely on terrestrial SPAs, but recognised the need for a review of implementation of the Birds Directive in the UK's marine environment²⁰. As a result of this, it is likely that further marine SPAs will be designated in the future.</p>			
<p>Biodiversity and Ecosystems:</p> <p>Special Areas of Conservation (SACs)</p>	<p>SACs are strictly protected sites designated under the EC Habitats Directive. Article 3 of the Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). Sites of Community Importance (SCIs) are sites that have been adopted by the European Commission but not yet formally designated by the government of each country. Candidate SACs (cSACs) are sites that have been submitted to the European Commission, but not yet formally adopted. SACs / SCIs / cSACs cover marine as well as terrestrial areas²¹.</p> <p>SACs are of national and international conservation importance.</p> <p>The locations of SACs are shown in Figure 1.</p>			
	As of October 2019, there were 242 SACs, covering an area of 1,068,558 ha. There are three SACs crossing the England / Scotland border (112,770 ha) and seven	As of October 2019, there were 238 SACs and one SCI in Scotland, covering an area of 2,288,674 ha. There are three SACs crossing the England / Scotland border	As of October 2019, there were 85 SACs in Wales, covering an area of 590,915 ha. There are seven across the England / Wales border (95,182 ha), one classified as	As of October 2019, there were 57 SACs in Northern Ireland, covering an area of 85,871 ha ²⁵ . There is also one SAC classified as Northern Ireland / Offshore

²⁰ Joint Nature Conservation Committee (2013) *Special protection Areas*. Available: <http://jncc.defra.gov.uk/page-162>.

²¹ Joint Nature Conservation Committee (2016) *Special Areas of Conservation (SAC)*. Available: <http://jncc.defra.gov.uk/page-23>.

²⁵ Joint Nature Conservation Committee (2016) *Special Areas of Conservation/Sites of Community Importance in the UK as at 15 September 2016*. Available: <http://jncc.defra.gov.uk/page-1456>.

	<p>across the England / Wales border (95,182 ha). Additionally, there are three SACs which are classified as England / Offshore (3,795,179 ha) and one classified as England / Wales / Offshore (584,989 ha)²². SACs are widely distributed throughout England; however the highest concentrations correspond with the more remote rural and upland locations. There are also currently 37 SACs with marine components designated partly or wholly within English waters. A further 3 SACs with marine components are located within both English and Welsh waters.</p>	<p>(112,770 ha). Additionally, there are two SCIs which are classified as Scotland / Offshore (182,232 ha)²³. SACs in Scotland are widely and densely distributed throughout the country. Large concentrations are found in coastal and highland areas.</p>	<p>England / Wales / Offshore (584,989 ha) and one classified as Wales / Offshore (1,062,562 ha).²⁴ SACs are widely distributed throughout Wales. There are also currently 12 SACs with marine components designated partly or wholly within Welsh waters.</p>	<p>(160,367 ha). SACs are widely distributed throughout Northern Ireland, with the largest being situated around the coast and border with the Republic of Ireland.</p>
	<p>Supporting Trend Data:</p> <p>Member States of the European Union are required to report every six years on the conservation status of habitats and species listed on the annexes of the Habitats Directive. In general, the status of UK habitats of European importance declined over the reporting period 2007 – 2013 and were identified to have improved in the most recent assessment (2019). In 2007, 5% of UK habitats listed in Annex I of the EU Habitats Directive were in favourable conservation status, this figure decreased to 3% in</p>			

²² Joint Nature Conservation Committee (2016) *Special Areas of Conservation/Sites of Community Importance in the UK as at 15 September 2016*. Available: <http://jncc.defra.gov.uk/page-1456>.

²³ Joint Nature Conservation Committee JNCC (2016) *Special Areas of Conservation/Sites of Community Importance in the UK as at 15 September 2016*. Available: <http://jncc.defra.gov.uk/page-1456>.

²⁴ Joint Nature Conservation Committee (2016) *Special Areas of Conservation/Sites of Community Importance in the UK as at 15 September 2016*. Available: <http://jncc.defra.gov.uk/page-1456>.

	<p>2013 before increasing again to 8% in 2019. The conservation status of 48% of the habitats was unfavourable-improving in 2007, it decreased to 31% in 2013 and 20% in 2019. The conservation status of 30% of the habitats was unfavourable-declining in 2007, this decreased to 25% in 2013 and 23% in 2019.²⁶.</p>			
Biodiversity and Ecosystems: Ramsar Sites	<p>Ramsar sites are wetlands of international importance designated under the Ramsar Convention. In the UK, the first Ramsar sites were designated in 1976. The initial emphasis was on selecting sites of importance to waterbirds within the UK, and consequently many Ramsar sites are also Special Protection Areas (SPAs) classified under the Birds Directive²⁷.</p> <p>Ramsar sites are of national and international conservation importance.</p> <p>The locations of Ramsar sites are shown in Figure 1.</p>			
	<p>As of May 2018, there were 68 Ramsar sites in England, totalling an area of 320,648 ha. There are three sites crossing the England / Wales border (40,553 ha total) and one site crossing the England / Scotland border (43,637 ha)²⁸. Ramsar sites in England are predominantly located in coastal and estuarine areas, however there are smaller sites distributed inland throughout the country.</p>	<p>As of May 2018, there were 50 Ramsar sites in Scotland, totalling an area of 283,083 ha. There is one site crossing the England / Scotland border (43,637 ha)²⁹. Ramsar sites in Scotland are primarily located in coastal and estuarine areas, with various lochs being designated, particularly in the far north off the country.</p>	<p>As of May 2018, there were 7 Ramsar sites in Wales, totalling an area of 11,366 ha. There were three sites crossing the England / Wales border, totalling 40,553 ha³⁰. Ramsar are located in coastal and estuarine areas of Wales, with several situated in the central and northern highlands.</p>	<p>As of May 2018, there were 20 Ramsar sites in Northern Ireland, totalling an area of 88,152 ha³¹. Ramsar sites in Northern Ireland are primarily located in coastal and estuarine areas.</p>

²⁶ Joint Nature Conservation Committee (2013) C3. *Status of European habitats and species*. Available: <http://jncc.defra.gov.uk/page-4239>

²⁷ Joint Nature Conservation Committee (2015) *Ramsar sites in the UK, its Overseas Territories and Crown Dependencies*. Available: <http://jncc.defra.gov.uk/page-161>.

²⁸ Joint Nature Conservation Committee (2015) *UK Ramsar sites*. Available: <http://jncc.defra.gov.uk/page-1388>.

²⁹ Joint Nature Conservation Committee (2015) *UK Ramsar sites*. Available: <http://jncc.defra.gov.uk/page-1388>.

³⁰ Joint Nature Conservation Committee (2015) *UK Ramsar sites*. Available: <http://jncc.defra.gov.uk/page-1388>.

³¹ Joint Nature Conservation Committee (2015) *UK Ramsar sites*. Available: <http://jncc.defra.gov.uk/page-1388>.

	<i>Supporting trend data is not available.</i>			
Biodiversity and Ecosystems: National Nature Reserves (NNRs) and Local Nature Reserves (LNRs)	<p>NNRs contain examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in the UK. They are managed to conserve their habitats or to provide special opportunities for scientific study of the habitats communities and species represented within them. In addition, they may be managed to provide public recreation that is compatible with their natural heritage interests.</p> <p>NNRs are declared by the statutory country conservation agencies under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981. In Northern Ireland, Nature Reserves are designated under the Amenities Lands Act (Northern Ireland) 1965. In Scotland, whilst SNH remains the statutory designating authority, decisions to declare new NNR are shared with a Partnership Group of interested organisations³².</p> <p>NNRs are of national conservation importance.</p> <p>The locations of NNRs are shown in Figure 1.</p> <p>Local Nature Reserves (LNRs) are a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities. Parish and Town Councils can also declare LNRs, but they must have the powers to do so delegated to them by a principal local authority. LNRs are places with wildlife or geological features that are of special interest locally. They offer people opportunities to study or learn about nature or simply to enjoy it. They range from windswept coastal headlands, ancient woodlands and flower-rich meadows to former inner-city railways, long abandoned landfill sites and industrial areas now re-colonised by wildlife.</p>			
	As of January 2021, there were 224 NNRs in England, totalling an area of 94,400 ha. The largest is The Wash covering almost 8,800 hectares, while Dorset's Horn Park Quarry is the smallest at	There are 43 NNRs in Scotland, totalling an area of 154,250 ha ³⁴ . NNRs within Scotland cover a wide variety of Scotland's habitats and species from pine forest to blanket bog, from seabird	There are 76 NNRs in Wales. These cover a wide range of habitats from high mountains, peat bogs and woodlands, to sand dunes, mud flats and remote off-shore islands ³⁵ .	As of November 2016, there are 12 NNRs in Northern Ireland, totalling an area of 1,800 ha. These are concentrated in the east and north east of the country. They contain a wide range of

³² Joint Nature Conservation Committee (2014) *Protected areas designations directory*. Available: <http://jncc.defra.gov.uk/page-1527>.

³⁴ Scotland's National Nature Reserves (2021) *What are National Nature Reserves?*. Available: <https://www.nnr.scot/About>

³⁵ Natural Resources Wales (2021) *National Nature Reserves*. Available: <https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/national-nature-reserves/?lang=en>

	<p>0.32 ha³³. NNRs are widely distributed throughout England.</p> <p>As of November 2021, there are 1,680 LNRs in England.</p>	<p>colonies to mountain plants. NNRs are distributed throughout Scotland, with larger concentrations within the north of the country.</p> <p>There are 75 LNRs in Scotland, usually close to towns and cities. The most recent LNR designation was the extension to Stevenston Beach LNR in North Ayrshire in June 2019.</p>	<p>There are approximately 74 LNRs in Wales, designated by the Countryside Council for Wales³⁶.</p>	<p>species, communities and geology³⁷.</p> <p>There are 37 Nature Reserves in Northern Ireland cover 3,300 ha.</p>
	<p><i>Supporting trend data is not available.</i></p>			
<p>Biodiversity and Ecosystems</p> <p>Sites of Special Scientific Interest (SSSI) (England, Scotland and Wales) and Areas of Special</p>	<p>The SSSI / ASSI series has developed since 1949 as the suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. SSSIs were originally notified under the National Parks and Access to the Countryside Act 1949, and then were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010. ASSIs are notified under the Nature Conservation and Amenity Lands (Northern Ireland) 1985. Measures to improve ASSI protection and management are contained in the Environment (Northern Ireland) Order 2002³⁸.</p> <p>SSSIs / ASSIs are of national conservation importance.</p> <p>The locations of SSSIs and ASSIs are shown in Figure 1.</p>			

³³ Natural England (2021) *National Nature Reserves in England*. Available: <https://www.gov.uk/government/collections/national-nature-reserves-in-england>.

³⁶ *Local Nature Reserves in Wales - a Freedom of Information request to Countryside Council for Wales - WhatDoTheyKnow*

³⁷ Northern Ireland Environment Agency (2016) *NIEA Policy position statement on National Nature Reserves*. Available: <https://www.daera-ni.gov.uk/publications/niea-policy-position-statement-statutory-nature-reserves>.

³⁸ Joint Nature Conservation Committee (2014) *Protected areas designations directory*. Available: <http://jncc.defra.gov.uk/page-1527>.

<p>Scientific Interest (ASSI) (Northern Ireland)</p> <p>NB: The SSSI / ASSI information shown includes sites designated for both biological and geological reasons.</p>	<p>There are over 4,000 SSSIs in England, covering about 7% of the country's surface area³⁹. Some of these sites correspond with other designations, such as SACs, SPAs and NNRs. SSSIs are widespread throughout the whole of England, and cover a wide variety of habitats and geological features.</p>	<p>As of August 2020, there were 1,422 SSSIs in Scotland covering about 13% of the country's surface area⁴⁰. Some of these sites correspond with other designations, such as SACs, SPAs and NNRs. SSSIs are widespread throughout the whole of Scotland, and cover a wide variety of habitats and geological features.</p>	<p>There are more than 1,000 SSSIs in Wales, covering about 12% of the country's surface area⁴¹. Some of these sites correspond with other designations, such as SACs, SPAs and NNRs. SSSIs are widespread throughout the whole of Wales, and cover a wide variety of habitats and geological features. (NRW 2016)</p>	<p>There are 394 ASSIs in Northern Ireland⁴². ASSIs are widespread throughout the whole of Northern Ireland, and cover a wide variety of habitats and geological features.</p>
	<p>Supporting Trend Data:</p> <p>The last assessment of the status of SSSIs and ASSIs was undertaken in 2005. This indicated that between 1999 and 2005, less than 50% of the biological features monitored in SSSIs and ASSIs were in favourable condition⁴³.</p>			
<p>Biodiversity and Ecosystems:</p>	<p>MCZs are established to protect nationally important marine wildlife, habitats, geology and geomorphology and can be designated anywhere in English, Welsh and Northern Irish inshore and UK offshore waters⁴⁴. They are established under the Marine and Coastal Access Act (2009). In Northern Ireland, MCZs are designated under the Marine Act (Northern Ireland) (2013)⁴⁵.</p> <p>MCZs are of national conservation importance.</p>			

³⁹ Natural England (2016) *Designated Sites View*. Available: <https://designatedsites.naturalengland.org.uk/>.

⁴⁰ NatureScot (2020) *Sites of Special Scientific Interest (SSSIs)*. Available: <https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/national-designations/sites-special-scientific-interest-sssis>

⁴¹ Natural Resources Wales (2016) *Site of Special Scientific Interest (SSSIs)*. Available: <https://naturalresources.wales/conservation-biodiversity-and-wildlife/find-protected-areas-of-land-and-seas/sites-of-special-scientific-interest-sssis/?lang=en>.

⁴² Department of Agriculture, Environment and Rural Affairs (2016) *Areas of Special Scientific Interest*. Available: <https://www.daera-ni.gov.uk/topics/land-and-landscapes/areas-special-scientific-interest>.

⁴³ Joint Nature Conservation Committee (2010) *Common Standards Monitoring for Designated Sites: First Six Year Report*. Available: <http://jncc.defra.gov.uk/page-3520#download>

⁴⁴ Joint Nature Conservation Committee (2014) *Protected areas designations directory*. Available: <http://jncc.defra.gov.uk/page-1527>.

⁴⁵ Joint Nature Conservation Committee (2016) *MCZ Project Northern Ireland*. Available: <http://jncc.defra.gov.uk/page-6682>

Marine Conservation Zones (MCZs)	The locations of MCZs are shown in Figure 1.			
	There are 89 MCZs within English waters. These are located in coastal and offshore locations and are designated for a range of habitats, wildlife conservation and geological features ⁴⁶ .	This designation is not applicable to Scotland.	There is one MCZ in Welsh water, Skomer, covering 130.2 ha. Skomer MCZ is situated around the island of Skomer and the Marloes Peninsula in Pembrokeshire, south west Wales. Skomer MCZ has species and habitats of national and international importance. These include grey seal, pink seafan, sponge communities, eelgrass and algal communities ⁴⁷ . In addition, the Welsh Government, with support from NRW and JNCC and other stakeholders are currently working to identify a small number of possible Marine Conservation Zones thus fulfilling a 2017 Ministerial commitment to meet national and international obligations to complete the network of Marine Protected Areas,	There are five MCZs in Northern Irish waters ⁴⁸ : <ul style="list-style-type: none"> • Strangford Lough • Carlingford Lough (NB this area is adjacent to the border with the Republic of Ireland) • Outer Belfast Lough • Waterfoot • Rathlin

⁴⁶ Joint Nature Conservation Committee (2019) *Marine Conservation Zones*. Available: <https://jncc.gov.uk/our-work/marine-conservation-zones/>

⁴⁷ Natural Resources Wales (2016) *Skomer Marine Conservation Zone*. Available: <https://naturalresources.wales/conservation-biodiversity-and-wildlife/find-protected-areas-of-land-and-seas/skomer-marine-conservation-zone/?lang=en>

⁴⁸ Joint Nature Conservation Committee (2016) *Marine Protected Areas UK*. Available: <http://jncc.defra.gov.uk/page-5201>.

			informed by the 2016 Welsh MPA network assessment.	
	<i>Supporting trend data is not available.</i>			
Biodiversity and Ecosystems: Nature Conservation Marine Protected Areas (NCMPAs)	NCMPAs are designated by Scottish Natural Heritage through the Marine (Scotland) Act (2010) and the Marine and Coastal Access Act (2009). NCMPAs are protected to reinforce the existing network of designated sites (SPAs, SACs, Ramsar) and introduce spatial protection for a wider range of marine wildlife, habitats and geology, previously not represented in the network ⁴⁹ . NCMPAs are of national conservation importance. The locations of NCMPAs are shown in Figure 1.			
	This designation is not applicable to England.	There are 17 NCMPAs in Scottish waters, covering approximately 10% of the Scottish seas. These are primarily designated to protect marine habitats and species ⁵⁰ .	This designation is not applicable to Wales.	This designation is not applicable to Northern Ireland.
	<i>Supporting trend data is not available.</i>			
	Biodiversity and Ecosystems: Ancient Woodland is land that has had continuous woodland cover since at least 1600AD (England and Wales) and 1750AD (Scotland) and is identified within the Ancient Woodland Inventory. As Ancient Woodlands have developed over such long timescales, they have unique features such as relatively undisturbed soils and communities of plants and animals that depend on the stable conditions that Ancient Woodland provides. These are often rare and vulnerable species.			

⁴⁹ Scottish Natural Heritage (2016) *Marine Protected Areas*. Available: [http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/national-designations/marine-protected-areas-\(mpa\)/](http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/national-designations/marine-protected-areas-(mpa)/)

⁵⁰ Scottish Natural Heritage (2016) *Nature Conservation Marine Protected Areas*. Available: <http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/national-designations/mpas/>

Ancient Woodland	<p>There are two types of Ancient Woodland classification in England, Wales and Scotland; Ancient semi-natural woods and plantations on Ancient Woodland sites. Ancient semi-natural woods are woods that have developed naturally and may have existed since woodland first colonised the UK after the last glaciation. Plantations on Ancient Woodland sites are ancient woods that were felled and planted with non-native trees⁵¹.</p> <p>In Northern Ireland, four classifications of Ancient Woodland exist: Ancient Woodland; Probably Ancient Woodland; Possibly Ancient Woodland, and; Long Established Woodland⁵².</p> <p>Ancient Woodland is irreplaceable and is of national conservation importance; however it does not have statutory protection in its own right.</p> <p>The location of Ancient Woodland sites are shown in Figure 1 (England and Scotland).</p> <p><i>NB: No mapping data is available for Wales and Northern Ireland.</i></p>			
	<p>The Ancient Woodland Inventory for England identifies over 52,000 ancient woodland sites in England⁵³. Ancient Woodland sites are scattered throughout England, with the densest concentrations being in the south east⁵⁴.</p>	<p>Native woodlands occur in most of mainland Scotland and on several islands. Over 8,000 woods are identified as native woods of ancient origin in the SNH Woodland Inventory, but most are very small. Altogether this woodland covers only a tiny portion (1%) of the land, only one fifth is currently protected</p>	<p>The Ancient Woodland Inventory 2011 indicates that there are around 95,000ha of Ancient Woodland in Wales⁵⁶.</p>	<p>The Inventory of Ancient and Long-Established Woodland identifies 2,374 sites, totalling 9,964ha. Of this, only 151ha is classified as Ancient Woodland (present since 1600AD) with 5,662ha classified as Long-Established Woodland, 3,269ha as Possibly Ancient Woodland, 882ha of Probably Ancient Woodland.</p>

⁵¹ Woodland Trust (2008) *KEY for classification of woods on the inventory and definitions of different antiquity classifications*. Available:

<http://www.backonthemap.org.uk/NR/rdonlyres/7F3F67AD-5A28-4897-A039-3FC97841B6D5/0/080612Updateddecisionkeyforwebsiteandreport.pdf>

⁵² Woodland Trust (2016) *Ancient Woodland*. Available: <https://www.woodlandtrust.org.uk/visiting-woods/trees-woods-and-wildlife/woodland-habitats/ancient-woodland/>

⁵³ Natural England (2016) *Ancient Woodland Inventory (provisional for England – Digital Boundaries)*. Available: http://www.gis.naturalengland.org.uk/pubs/gis/tech_aw.htm

⁵⁴ Defra (2016) *MAgiC – Ancient Woodland (England)*. Available: <http://magic.defra.gov.uk/MagicMap.aspx>

⁵⁶ Natural Resources Wales (2016) *Ancient Woodland Inventory*. Available: <https://naturalresources.wales/forestry/woodlands-and-the-environment/ancient-woodland-inventory/?lang=en>

		as nature reserves or SSSIs ⁵⁵ .		
	<p>Supporting Trend Data:</p> <p>Within Northern Ireland, 1,500ha of classifiable woodland was lost from 1960 – 2007, although only 16ha of this can be stated to be truly Ancient Woodland (present since 1600AD)⁵⁷. Trends are less clear within the rest of the UK, however the preservation of Ancient Woodland is increasing recognised within planning policy.</p>			
<p>Biodiversity and Ecosystems</p> <p>Biosphere Reserves</p>	<p>Biosphere Reserves are areas of terrestrial and coastal ecosystems promoting the conservation of biodiversity with sustainable use. Biosphere reserves serve to demonstrate integrated management of land, water and biodiversity. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) Man and the Biosphere (MAB) programme comprises a World Network of Biosphere Reserves⁵⁸.</p> <p>Biosphere Reserves are comprised of three interrelated zones:</p> <ol style="list-style-type: none"> 1) The Core Area (protected: the 'natural' state of the region's ecosystems). 2) The Buffer Zone (conserves the core area, and can accommodate positive human engagement, including research, education, training, tourism, extensive agriculture, or sustainable forestry). 3) The Transition Area (where most of the region's people live and work, using the natural resources in a sustainable manner). <p>Biosphere Reserves are non-statutory.</p> <p>The locations of Biosphere Reserves are shown in Figure 1.</p>			
	<p>There are two Biosphere Reserves in England.</p> <p>Brighton and Lewes Downs:</p>	<p>There are two Biosphere Reserves in Scotland.</p> <p>Galloway and Southern Ayrshire:</p>	<p>There is one Biosphere Reserve in Wales, Biosffer Dyfi.</p> <p>The area around the river Dyfi (west Wales) is a special</p>	<p>There are no Biosphere Reserves in Northern Ireland.</p>

⁵⁵ Scottish Natural Heritage (2016) – Ancient Woodland in Scotland. Available: <http://www.snh.org.uk/publications/on-line/livinglandscapes/Ancient%20Woodland/health.asp>

⁵⁷ Woodland Trust (2007) *Preliminary Report*. Available: <http://www.backonthemap.org.uk/NR/rdonlyres/09F70BD6-8E68-4328-90B7-05DFE9483550/0/070115Preliminaryreport.pdf>

⁵⁸ UNESCO (2017) *Biosphere Reserves*. Available: <http://www.unesco.org.uk/designation/biosphere-reserves/>

	<p>The Brighton and Lewes Downs Biosphere reserve covers almost 400km² of land and sea between the River Adur and the River Ouse, bringing together the three environments of countryside, coast, and city & towns under one united approach.</p> <p>Brighton and Lewes Downs Biosphere 2017⁵⁹</p> <p>North Devon:</p> <p>The North Devon Biosphere Reserve covers 3,300km² of land and sea. The reserve extends from the catchments of the Rivers Taw and Torridge and out to the island of Lundy, with its core at Braunton Burrows sand dune system⁶⁰.</p>	<p>Covering 5268km² the Galloway and Southern Ayrshire Biosphere was granted its status in recognition of the special natural qualities that characterise the area. It is home to 95,000 people who work together to improve life whilst caring for the natural environment.</p> <p>Wester Ross:</p> <p>The newly designated area of Wester Ross extends from the tip of Knoydart northwards to Achiltibuie and the Summer Isles, including population centres in Kyle of Lochalsh, Lochcarron, Gairloch and Ullapool. The new designation replaces an earlier one for Beinn Eighe – a much smaller area that was managed solely for nature conservation, research and education⁶¹.</p>	<p>place for its people, its culture and the local environment. It hosts some of the finest and most inspiring landscapes and wildlife areas in Europe, as well as a passionate community that care strongly about their magnificent surroundings⁶².</p>	
<p><i>Supporting trend data is not available</i></p>				

⁵⁹ Brighton and Lewes Downs Biosphere (2017) *Brighton and Lewes Downs Biosphere*. Available: <http://biospherehere.org.uk/>

⁶⁰ North Devon Biosphere (2016) *Welcome to North Devon's UNESCO Biosphere Reserve*. Available: <http://www.northdevonbiosphere.org.uk/maps.html>

⁶¹ UNESCO (2017) *Biosphere Reserves*. Available: <http://www.unesco.org.uk/designation/biosphere-reserves/>

⁶² UNESCO (2017) *Biosphere Reserves*. Available: <http://www.unesco.org.uk/designation/biosphere-reserves/>

<p>Biodiversity and Ecosystems</p> <p>Biodiversity</p>	<p>Supporting Trend Data:</p> <p>Between 1970 and 2018, populations of breeding farmland and woodland birds decreased by 45% and 29% respectively, and the population index for breeding water and wetland birds was 17% lower than in 1975⁶³. The population of breeding seabirds is also in long-term decline, being 28% lower in 2018 than in 1986⁶⁴. Between 1970 and 2018, 63% of UK Biodiversity Action Plan (BAP) Priority Species had declined, with only 21% increasing⁶⁵.</p> <p>Long-term data on habitats is not available, however in 2007, 5% of UK habitats listed on Annex I of the Habitats Directive were in favourable conservation status, decreasing to 3% in 2013, before increasing again to 8% in 2019. The number of habitats classified as unfavourable improving decreased to 31% in 2013 and 20% in 2019 from 48% in 2007⁶⁶. Improvement was seen in the number of habitats assessed as unfavourable declining, with a 7% decrease between 2007 and 2019. 48% of UK habitats of European importance are assessed as being unfavourable stable⁶⁷.</p> <p>Some aspects do show improvement. The area of land in higher-level or targeted agri-environment schemes was 3.5 million hectares in 2019, an increase of 3.2 million hectares since 1992⁶⁸. There has also been improvements in the number of fish stocks being sustainable harvested, forestry land being sustainably managed and reductions in marine and air pollution⁶⁹.</p> <p>Increasingly, biodiversity is under pressure from development and increasing population, in addition to climate change. Overall climate change could lead to:</p> <ul style="list-style-type: none"> • Changes in phenology (including changes in the timings of seasonal events causing loss of synchronicity and increased competitive advantage for some species at the expense of others); • Shifts in suitable climate conditions for individual species leading to change in species distribution, abundance and range; • Changes in the community structure and ecosystem function of habitats which species occupy; • Changes to the composition and structure of plant and animal communities (including arrival of non-natives, loss of native species and increase in pest species); • Changes to habitats and ecosystems, such as altered water regimes, increased rates of decomposition in bogs and higher growth rates in forests; and • Loss of physical space due to sea level rise and increased storminess⁷⁰.
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⁶³ Joint Nature Conservation Committee (2020) C5. Birds of the wider countryside and at sea.

⁶⁴ Joint Nature Conservation Committee (2020) C5. Birds of the wider countryside and at sea.

⁶⁵ Joint Nature Conservation Committee (2020) C4. Status of UK priority species.

⁶⁶ Joint Nature Conservation Committee (2020) C3. Status of European habitats and species.

⁶⁷ Joint Nature Conservation Committee (2020) C3. Status of European habitats and species.

⁶⁸ Joint Nature Conservation Committee (2020) B1a. Area of land in agri-environment schemes

⁶⁹ Joint Nature Conservation Committee (2016) Overview of assessment of change for all indicators.

⁷⁰ Inter-Agency Climate Change Forum, 2010. *Biodiversity and Climate Change: A Summary of Impacts in the UK*.

It is also worth noting that opportunities exist to deal with challenges and risks to natural resources. For example the State of Natural Resources Report (SoNaRR)⁷¹ for Wales has identified the following, which are also considered to be applicable to the rest of the United Kingdom:

	Declining natural resources	Resilience of ecosystems	Optimising benefits	Minimising negative impacts
Green infrastructure in and around urban areas		Contribute to connectivity within and between ecosystems	Multi-benefits of urban green-spaces such as water filtration, accessible places for health and recreation, connecting habitats, and supporting opportunities for community cohesion	Tackling health inequalities and air quality
Increasing woodland cover, and bringing more of our existing woodlands into appropriate management	Will address woodland resource	Contribute to diversity and connectivity of woodlands	Multiple benefits of woodland, including health and recreation benefits, fibre and fuel, and wider catchment management opportunities	
Coastal zone management and managed realignment	Addressing coastal squeeze	Supporting coastal habitat	Supporting coastal communities, for example through providing opportunities for tourism and employment	Future proofing from coastal flooding / sea level rises
Maintaining, enhancing and restoring floodplains and hydrological systems	Water availability	Capacity of catchments to deal with high and low flows; supporting water quality	Supporting recreation and economic activity	Flood risk Social cohesion, equity/local economy
Better soil management	Investment in soils for future productivity	Soils underpin everything	Preventing erosion, supporting other habitats and benefits	Erosion, costs of water treatment etc
Utilisation of our uplands to deliver multiple benefits	Restoring peatland, safeguarding carbon stores	Wider resilience of upland and lowland habitats and species that depend on them	Making better use of Wales natural assets	Tackling climate change; reducing flood risk

⁷¹ <https://naturalresources.wales/media/681127/chapter-3-state-and-trends-final-for-publication.pdf>

Biodiversity and Ecosystems Marine Mammals	<p>At present, there are insufficient data on the populations of marine mammals in the OSPAR region III Celtic Seas (OSPAR 2010). Within this region, dolphins, porpoises and grey seals are impacted through fisheries by-catch. Harbour seals are counted every five or six years, the minimum to assess their status, and other marine mammals have little systematic recording. It is noted that that SCANS-III, a large scale ship and aerial survey studying the distribution and abundance of cetaceans in European Atlantic waters was conducted in 2016. The latest report (June 2021) provides new estimates of abundance which will be integral to cetacean assessments undertaken for the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) quality status report and for the EU Marine Strategy Framework Directive assessments of Good Environmental Status. Marine mammals may become entangled in ropes and nets in coastal waters to the west of Scotland and in the Minches there is concern about entanglement of minke whales, which are important to the local economy, through marine wildlife watching.</p>
Biodiversity and Ecosystems Damage to seabed habitats	<p>Significant damage has occurred to shallow sediment habitats and reefs as a result of bottom fishing practices especially beam trawling (OSPAR 2010). While some recovery in sensitive fish species abundance is noted for the Celtic Sea, when considering the Greater North Sea, evidence for population recovery is unclear (OSPAR 201788). Around the UK, coastal and offshore seabed sediment habitats such as sands and muds are impacted by a range of activities, however the spatial extent of damage generated by bottom trawling activity, which may damage ecosystem functioning, is considered to be the main source of pressure on benthic environments with an appropriate indicator developed for the updated assessment of GES (Defra 2019)..</p>
Biodiversity and Ecosystems Birds	<p>Along the eastern coast of the UK, some seabirds have continued to decline in numbers, and experience poor or failed breeding, possibly due to the combined effects of climate change and fishing on key species (e.g. sandeels). Fish discards from trawling may have contributed to elevated population sizes in some species. However, the implementation of the discard ban, phased in from 2015-2019 across the majority of EU fisheries, is expected to impact those seabird species that exploit this resource, e.g. herring gull, lesser black-backed gull, great black-backed gull, great skua, northern gannet, northern fulmar and black-legged kittiwake (JNCC 2020). While the wider seabird population trends for 2000-2018 still show an increase for some species, e.g. northern gannet, black-headed gull and razorbill, there is still a general decline in several recorded species, most notably Arctic skua, black-legged kittiwake, northern fulmar, little tern and European shag. In some cases, this decline may be slowing and populations may be stabilising, albeit at numbers lower than that seen from the last census; the publication of final results from the Seabirds Count census (2015-2021) will provide a clearer understanding of seabird populations around the UK and Ireland.</p> <p>Declines in seabird breeding numbers have also been observed to the west of Scotland associated with predation by introduced mammals and food supply shortages, the latter of which may be due in part to climate change, although eradication programmes of introduced predators on some islands is providing respite for seabirds vulnerable to predation.</p> <p>While insufficient data makes it difficult to produce population trends for some species from Northern Ireland, a pattern of decline for some species e.g. northern fulmar, is evident, with</p>

	<p>(severe) weather, predation and food shortages cited as reasons for poor breeding or breeding failures. However, relative to overall UK trends, populations of some species, notably blacklegged kittiwake, are stable (BTO 2020).</p> <p>Populations of some waterbird species continue to decline, with numbers reduced at principal sites (those supporting more than 75,000 birds) on both the east and west coasts of the UK. Climate change is thought to be one of the biggest drivers of broad scale changes in wintering numbers and distributions; milder weather around the Baltic is likely shortening time many species spend in the UK, low numbers and poorer breeding success could be the result of adverse weather at breeding locations in Russia, while climate change is also thought to be leading to short-stopping in migration journeys of some species (e.g. European white fronted goose and goldeneye) and influencing colonisation by egrets. At a site-specific level, pressures such as coastal human disturbance and development at estuaries can affect numbers (Frost et al. 2020).</p>
Biodiversity and Ecosystems Fish stocks	<p>The latest updated assessment towards achieving good environmental status (Defra 2019) reported that demersal fish communities were recovering from over-exploitation in the past, but GES had not yet been achieved in either the Greater North Sea or the Celtic Seas, nor would be achieved for all fish communities by 2020. A partial assessment of pelagic shelf fish did not provide a clear result. ICES advise that several North Sea stocks are harvested unsustainably (e.g. cod, whiting, haddock, mackerel, and blue whiting). However in both regions, recent trends in the number of sensitive species increasing in abundance suggest an improving situation and further decline in the population abundance of sensitive fish species has been halted⁸⁶ (see also OSPAR Intermediate Assessment⁷²).</p>
Biodiversity and Ecosystems Nature Recovery Network	<p>The NRN will be a national network of wildlife-rich places. The NRN is a major commitment in the government's 25 Year Environment Plan and part of the forthcoming Nature Strategy.</p> <p>Establishing the NRN will:</p> <ul style="list-style-type: none"> • enhance sites designated for nature conservation and other wildlife-rich places - newly created and restored wildlife-rich habitats, corridors and stepping stones will help wildlife populations to grow and move • improve the landscape's resilience to climate change, providing natural solutions to reduce carbon and manage flood risk, and sustaining vital ecosystems such as improved soil, clean water and clean air • reinforce the natural and cultural diversity of our landscapes, and protect our historic natural environment • enable us to enjoy and connect with nature where we live, work and play - benefiting our health and wellbeing <p>The aim is to use maps and data to identify priorities for nature's recovery. Locally developed strategies, LNRS, will be introduced to help plan, prioritise and target action and investment in nature at a regional level across England. These</p>

⁷² <https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/biodiversity-status/fish-and-food-webs/recovery-sensitive-fish/>

	<p>Recovery Strategies will include a map of existing areas important for nature and identify areas the opportunity areas for nature.</p> <p>As described below the legislative and mapped picture remains incomplete across the UK, however progress is evident across a number of areas. See the Wildlife Trusts⁷³, the West of England Nature Partnership⁷⁴ the Wildlife Trust for Beds, Cambs and Northants⁷⁵ and WildOxfordshire⁷⁶ as examples of draft and published outputs that begin to take shape.</p>			
	<p>England</p> <p>The Westminster Government's 25 Year Environment Plan (2018), and its Environment Bill, both promote and support the development of a Nature Recovery Network for England, and there will be a legal requirement to create Local Nature Recovery Strategies.</p>	<p>Scotland</p> <p>RSPB Scotland, the Scottish Wildlife Trust and WWF Scotland launched in 2020 the Nature Recovery Plan which sets out 11 transformative actions for nature's recovery in Scotland. This includes linking up wild places by delivering a Scottish Nature Network</p>	<p>Wales</p> <p>The Welsh Government's Nature Recovery Action Plan for Wales has as one of its five themes, "Maintaining and Enhancing Resilient Ecological Networks". The plan identifies a broad range of initiatives, including mapping opportunities for the restoration of habitat.</p>	<p>Northern Ireland</p> <p>Official government policy to underpin a Nature Recovery Network is not yet in place. Ulster Wildlife Trust is working to build capacity to deliver a Nature Recovery Network, however.</p>
<p>Biodiversity and Ecosystems</p> <p>Climate change adaptation risks and opportunities</p>	<p>Supporting Trend Data:</p> <p>Overall scoring of the current risks and opportunities to overall aims and objectives of Natural England⁷⁷. This includes the Impact (I) and Likelihood (L) ratings and assessment of medium- and long-term risks using two horizons of 2030 and 2050. To follow CCC advice of assessing risks to 4°C and planning adaptation to 2°C; UKCP18 projections considering RCP 2.6 as a low emissions scenario and RCP8.5 as a high emissions scenario. This overall risk assessment demonstrates the significant impacts we expect in the medium term, on a pathway for stabilising global warming below 2°C by 2100. Our adaptation plan actions outlined in the next section are designed to be the first step to dealing with these risks over the next five years. However, the plan will require regular reappraisal in response to the developing risks and impacts of climate change on our work. Many of these risks are interrelated due to the nature of climate change impacts on the natural environment. Addressing these risks and opportunities in an integrated way is also reflected in our adaptation actions.</p>			

⁷³ [Space for nature | The Wildlife Trusts](#)

⁷⁴ [Nature Recovery Network - WENP](#)

⁷⁵ [Nature Recovery Network Maps | Wildlife Trust for Beds, Cambs & Northants \(wildlifebcn.org\)](#)

⁷⁶ [Draft Map of Oxfordshire's Nature Recovery Network | Wild Oxfordshire](#)

⁷⁷ <http://nepubprod.appspot.com/publication/4891702237331456>

If international efforts to limit global temperatures rises are not successful and we continue on a pathway to 4°C global warming at the end of century we are likely to experience severe impacts to our aims in both the medium and long term. Adapting to these impacts is beyond the scope of this adaptation plan, which would require more urgent and significant action.

Risks	Medium term risk		Long term risk	
	RCP 2.6	RCP 8.5	RCP 2.6	RCP8.5
Risks to the viability of the Nature Recovery Network and the recovery of threatened species and habitats	9 moderate I – moderate L– possible	12 major I – major L– possible	16 major I - major L - likely	20 severe I – major L – almost certain
Risks to the status of protected sites for biodiversity and geodiversity	12 major I - moderate L - likely	16 major I - major L - likely	16 major I - major L - likely	20 severe I – major L – almost certain
Risks to the ability of the SSSI network, MPAs, NNRs and protected landscapes to adapt to climate change	12 major I - moderate L - likely	16 major I - major L - likely	16 major I - major L - likely	20 severe I – major L – almost certain

	Risks to natural capital and its contribution to agriculture, fisheries and sustainable development including farm advice and net gain	12 major I - moderate L - likely	16 major I - major L - likely	16 major I - major L - likely	20 severe I – major L – almost certain
	Risks to the viability of natural areas for people to access and connect with nature	3 minor I - minimal L - possible	6 moderate I - minor L - possible	12 major I - moderate L - likely	16 major I - major L - likely
	Risks and opportunities for Natural England's role as a leader in nature recovery and climate change.	3 minor I - minimal L - possible	6 moderate I - minor L - possible	12 major I - moderate L - likely	16 major I - major L - likely
	Risks and opportunities for different species and habitats under changing climatic conditions.	10 major I – minor L – almost certain	15 major I – moderate L – almost certain	15 major I – moderate L – almost certain	20 severe I – major L – almost certain

Sustainability Topic / Baseline	England	Scotland	Wales	Northern Ireland
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Communities – Population, Employment, and Viability: Population	The population in the UK is measured through the Census. This provides an estimate of the overall population the UK and its distribution within countries and regions. The last Census was undertaken in 2011. The Office for National Statistics (ONS) also provides mid-year population estimates which provide annual and more recent data ⁷⁸ .			
	The population of England in mid-2021 was 56,536,419 which accounts for 84% of the UK's population ⁷⁹ .	The population of Scotland in mid-2021 was 5,479,900 which accounts for 8% of the UK's population ⁸⁰ .	The population of Wales in mid-2021 was 3,105,410 which accounts for 5% of the UK's population ⁸¹ .	The population of Northern Ireland in June 2019 was 1,904,563 which accounts for 3% of the UK's population ⁸² .
	Supporting Trend Data: Over the year to mid-2019, decreasing numbers of births and net international migration have resulted in the slowest rate of growth that the UK has seen in 15 years, returning it to the level seen in mid-2004 at 0.5% (361,000). Despite population growth slowing, this was the 37th consecutive year (since 1982) that the total UK population has increased.			
Communities – Population,	The densest areas of population within the UK are within towns and cities. The locations of urban areas are shown in Figure 2.			

⁷⁸ Office for National Statistics (2012) *2011 Census: Population Estimates for the United Kingdom, March 2011*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/2011censuspopulationestimatesfortheunitedkingdom/2012-12-17>

⁷⁹ Office for National Statistics (2022) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2021*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

⁸⁰ Office for National Statistics (2022) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2021*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

⁸¹ Office for National Statistics (2022) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2021*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

⁸² Office for National Statistics (2022) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2021*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

Employment, and Viability: The location of major settlements and areas of population.	The south east of England, in particular London and the surrounding areas are highly populated. Large urban areas are located along the south coast, including Brighton, Southampton, Portsmouth and Bournemouth. The midlands and north west are also locations of large urban areas, including Birmingham, Leicester, Nottingham, Greater Manchester and Liverpool. The east, north east and south west of England contain fewer major settlements, however large urban areas are located in these regions, including Newcastle, Sunderland, Leeds and Bristol. (GIS Mapping)	The largest settlements in Scotland are Glasgow and Edinburgh, both of which are located in the south of the country. The east coast has several areas of population including Aberdeen, Inverness and Dundee. The highland areas and north and west coasts of Scotland are comparatively sparsely populated. (GIS Mapping)	The most populated area of Wales is the south coast, where the large urban areas of Cardiff, Newport, Bridgend and Swansea are located. The north coast has fewer major urban settlements, however areas of population are present in Rhyl, Colwyn Bay and Bangor. Central and western Wales have smaller towns and villages distributed throughout the regions. (GIS Mapping)	The major settlements in Northern Ireland are Belfast to the east and Londonderry to the north west. The area surrounding Belfast is particularly densely populated, with smaller urban areas including Bangor, Lisburn and Carrickfergus located in close proximity to Belfast. Smaller towns and villages are distributed through the rest of the country. (GIS Mapping)
	<i>Supporting trend data is not available.</i>			
Communities – Population,	Using the 2011 Census, the Office for National Statistics compared the age structures of each of the UK countries. This was split into three categories: 0-14, 15-64 (i.e. working age) and 65+. Mid-year population estimates provide annual and more recent data on these age structures ⁸³ .			

⁸³ Office for National Statistics (2020) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2019*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2019estimates#population-growth-in-england-wales-scotland-and-northern-ireland>

Employment, and Viability: Age Structure – Working age population	In mid-2021, in England, the estimated percentage of the population in each age group was ⁸⁴ : 0-14: 17.4% 15-64: 64.1% 65+: 18.5%	In mid-2021, in Scotland, the estimated percentage of the population in each age group was ⁸⁵ : 0-14: 15.6% 15-64: 64.8% 65+: 19.6%	In mid-2021, in Wales, the estimated percentage of the population in each age group was ⁸⁶ : 0-14: 16.5% 15-64: 62.1% 65+: 21.4%	In mid-2021, in Northern Ireland, the estimated percentage of the population in each age group was ⁸⁷ : 0-14: 19.1% 15-64: 63.6% 65+: 17.3%
	Supporting Trend Data: In mid-2019, there were 12.4 million people aged 65 years and over (18.5%) and 2.5% were aged 85 years and over. Between mid-2009 and mid-2019, the number of children (those aged under 16 years) increased by 8.0% to 12.7 million and the working age population (those aged 16 to 64 years) increased by 3.2% to 41.7 million, the lowest growth of any age group. The number of people aged 65 years and over increased by 22.9% to 12.4 million. The number of people aged 70 years and over increased by 24.7% to 9.0 million. The number of people aged 85 years and over increased by 23% to 1.6 million ⁸⁸ .			

⁸⁴ Office for National Statistics (2022) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2021*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

⁸⁵ Office for National Statistics (2022) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2021*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

⁸⁶ Office for National Statistics (2022) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2021*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

⁸⁷ Office for National Statistics (2022) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2021*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>

⁸⁸ Office for National Statistics (2020) *Population estimates for the UK, England and Wales, Scotland and Northern Ireland: mid-2019*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2019estimates#population-growth-in-england-wales-scotland-and-northern-ireland>

Communities – Population, Employment, and Viability: Unemployment	The definition of unemployed people within the UK is specified by the International Labour Organisation. This defines unemployed people as being without a job, having been actively seeking work in the past four weeks and are available to start work in the next two weeks, or people who are out of work, have found a job and are waiting to start it in the next two weeks ⁸⁹ .			
	As of October 2022, the unemployment rate in England was 3.7% ⁹⁰ .	As of October 2022, the unemployment rate in Scotland was 3.3% ⁹¹ .	As of October 2022, the unemployment rate in Wales was 3.4% ⁹² .	As of October 2022, the unemployment rate in Northern Ireland was 2.8% ⁹³ .
	Supporting Trend Data: The unemployment rate has fluctuated in the UK since 1992. A general decrease in unemployment rates can be seen throughout the UK since the period of economic recession between 2009 and 2012, however this is largely dependent on economic performance. Since the coronavirus pandemic, unemployment rates have begun to increase. However, as this is still ongoing and is seen as temporary, there is still some uncertainty about the accuracy of this data and the effects on unemployment that will be present in the long-term.			
	This is a measure of people, who are economically active, expressed as a percentage of all people (aged 16-64).			

⁸⁹ Office for National Statistics (2020) *A guide to labour market statistics*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/aquidetolabourmarketstatistics#unemployment>

⁹⁰ Office for National Statistics (2023) *LFS: ILO unemployment rate: England: All: %: SA*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ycnl/lms>

⁹¹ Office for National Statistics (2023) *LFS: ILO unemployment rate: Scotland: All: %: SA*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ycnn/lms>

⁹² Office for National Statistics (2023) *LFS: ILO unemployment rate: Wales: All: %: SA*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ycnm/lms>

⁹³ Office for National Statistics (2023) *LFS: ILO unemployment rate: Northern Ireland: All: %: SA*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/zsfb/lms>

Communities – Population, Employment, and Viability: Economic Activity Rates	As of October 2022, the economic activity rate in England was 78.8% ⁹⁴ .	As of October 2022, the economic activity rate in Scotland was 78.7% ⁹⁵ .	As of October 2022, the economic activity rate in Wales was 74.8% ⁹⁶ .	As of October 2022, the economic activity rate in Northern Ireland was 73.4% ⁹⁷ .
	Supporting Trend Data: Economic activity rates in the UK have not varied significantly since 1992.			
Communities – Supporting Infrastructure: Locations of Strategic Rail Links	The locations of strategic rail links are shown in Figure 2.			
	The strategic rail network in England is well developed. All major cities are connected as are the majority of significant towns. Extensive rail networks are located around large conurbations such as London and Greater Manchester, with the major cities in the midlands being well connected. Remote, rural and coastal areas are less well served by rail. (GIS mapping)	The larger cities of Scotland are located in the south of the country and as such, this is where the majority of the strategic rail network is focused. This extends up the east coast to the cities of Dundee, Aberdeen and Inverness. The far north and western regions of Scotland are far less served by rail. This is largely as a result of fewer major urban centers being located in these areas.	Both the north and south coast of Wales are well connected by rail, linking the major coastal cities such as Cardiff and Swansea in the south, and Llandudno, Bangor and Holyhead in the north. Few major branch lines extend from these links, and the central and western regions of Wales are comparatively poorly served by rail. (GIS mapping)	The strategic rail network in Northern Ireland is concentrated in the east of the country around Belfast and the surrounding cities of Lisburn, Antrim, Bangor and Carrickfergus. The network extends to the north and north west, with Londonderry being the most westerly point. The central and south west regions are poorly served by rail. (GIS mapping)

- ⁹⁴ Office for National Statistics (2023) *LFS: Economic activity rate: England: Aged 16-64: All: %: SA*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/lf3l/lms>
- ⁹⁵ Office for National Statistics (20213) *LFS: Economic activity rate: Scotland: Aged 16-64: All: %: SA*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/lf3n/lms>
- ⁹⁶ Office for National Statistics (2023) *LFS: Economic activity rate: Wales: Aged 16-64: All: %: SA*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/lf3m/lms>
- ⁹⁷ Office for National Statistics (2023) *LFS: Economic activity rate: Northern Ireland: Aged 16-64: All: %: SA*. Available: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/lf5y/lms>

		(GIS mapping)		
	Supporting Trend Data: Major new strategic rail projects currently being undertaken in the UK include High Speed Two (HS2), Crossrail, Northern Powerhouse Rail and Midlands Engine. Upgrades to lines and electrification projects are continually taking place. It is considered unlikely that future projects will significantly increase the strategic rail network.			
Communities – Supporting Infrastructure: Locations of strategic road networks (motorways and primary roads)	The locations of motorways and primary roads are shown in Figure 2.			
	England is covered by a comprehensive network of motorways and A roads. All major cities are served by motorways, whilst towns and larger villages are connected by A routes. Areas not serviced by these connections are generally rural and in areas of low population. (GIS mapping)	The major cities of Glasgow and Edinburgh are served by the motorway network which extends north to Perth. The west coast has a substantial network of A roads linking the major coastal cities. The A road network in highland areas and the west coast are less extensive, although most towns and large villages are connected. (GIS mapping)	The south and north coast of Wales are the only areas with motorway connections. The remaining regions are serviced by the A road network which links the major towns and villages. Comparatively the central and upland regions are less provisioned with strategic network links. (GIS mapping)	The motorway network in Northern Ireland is focused around Belfast in the east, with two links extending north west and south west. These terminate in Randalstown and Dungannon respectively. The remaining regions are well connected by the A road network, which services towns and the majority of larger villages. (GIS mapping)
	Supporting Trend Data: The strategic road network in the UK is constantly undergoing maintenance and improvements to improve efficiency, such as managed motorways. It is considered unlikely that significant new strategic road networks will be developed.			
	The locations of major airports (+500,000 passenger per year) are shown in Figure 2.			

Communities – Supporting Infrastructure: Location of Airports	Major Airports in England are ⁹⁸ : <ul style="list-style-type: none"> • Heathrow • Gatwick • Manchester • Stansted • Luton • Birmingham • Bristol • Liverpool (John Lennon) • Newcastle • East Midlands International • London city • Leeds Bradford • Southampton • Doncaster Sheffield • Southend • Exeter • Bournemouth • Norwich 	Major Airports in Scotland are ⁹⁹ : <ul style="list-style-type: none"> • Edinburgh • Glasgow • Aberdeen • Inverness • Prestwick 	The only major airport in Wales is Cardiff ¹⁰⁰ .	Major Airports in Northern Ireland are ¹⁰¹ : <ul style="list-style-type: none"> • Belfast International • Belfast City (George Best)
	Supporting Trend Data:			

⁹⁸ Civil Aviation Authority (2020) *Airport Data 2020 02*. Available: <https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2020-02/>

⁹⁹ Civil Aviation Authority (2020) *Airport Data 2020 02*. Available: <https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2020-02/>

¹⁰⁰ Civil Aviation Authority (2020) *Airport Data 2020 02*. Available: <https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2020-02/>

¹⁰¹ Civil Aviation Authority (2020) *Airport Data 2020 02*. Available: <https://www.caa.co.uk/Data-and-analysis/UK-aviation-market/Airports/Datasets/UK-Airport-data/Airport-data-2020-02/>

	The proposed expansion of London Heathrow Airport is likely to increase airport capacity in the south east of England if approved, in addition to smaller-scale improvements at other airports. It is considered unlikely that other significant new airports will be developed, although capacity may be increased through development at existing sites.			
Communities – Supporting Infrastructure: Location of Ports	The locations of principal ports (handling +2m tonnes of freight per year) are shown in Figure 2.			
	Principal ports in England ¹⁰² : <ul style="list-style-type: none"> • Tyne • Tees and Hartlepool • Hull • Grimsby and Immingham • Rivers Hull and Humber • Ipswich • Felixstowe • Harwich • Medway • Dover • London • Portsmouth • Southampton • Plymouth • Bristol • Liverpool 	Principal ports in Scotland ¹⁰³ : <ul style="list-style-type: none"> • Forth • Clyde • Glensanda • Aberdeen • Cairnryan • Loch Ryan • Orkney • Sullom Voe 	Principal ports in Wales are ¹⁰⁴ : <ul style="list-style-type: none"> • Milford Haven • Port Talbot • Holyhead • Newport 	Principal ports in Northern Ireland are ¹⁰⁵ : <ul style="list-style-type: none"> • Belfast • Larne • Warrenpoint

¹⁰² Department for Transport (2020) *UK Port Freight Statistics: 2019*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908558/port-freight-statistics-2019.pdf

¹⁰³ Department for Transport (2020) *UK Port Freight Statistics: 2019*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908558/port-freight-statistics-2019.pdf

¹⁰⁴ Department for Transport (2020) *UK Port Freight Statistics: 2019*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908558/port-freight-statistics-2019.pdf

¹⁰⁵ Department for Transport (2020) *UK Port Freight Statistics: 2019*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908558/port-freight-statistics-2019.pdf

	<ul style="list-style-type: none"> ManchesterHeysham 			
	Supporting Trend Data: It is considered unlikely that significant new strategic port development will take place.			
Health and Well-Being: Radioactivity levels in the environment	Radiation levels in the UK are monitored regularly. This is undertaken by the Radioactive Incident Monitoring Network (RIMNET), the Environment Agency, Public Health England, the Scottish Environment Protection Agency (SEPA) Northern Ireland Environment Agency (NIEA), Natural Resources Wales (NRW) and operators of nuclear sites. Environment agencies monitor radioactivity to: <ul style="list-style-type: none"> check whether radiation exposure conforms to legal limits; check that radioactivity in food and the environment from authorised releases and discharges does not affect people's health or the environment; gather long-term information on concentrations and trends so that we can identify any changes and take action if required, and; assess the public's total exposure to radiation around nuclear sites Monitoring includes several high volume air samplers, which are capable of detecting tiny amounts of radioactive particles in the air. Analysis can be carried out for short lived radionuclides. Results are published in Radioactivity in Food and the Environment (RIFE) reports. The latest RIFE report was published in 2020 and contains data for 2019 ¹⁰⁶ .			
	The RIFE report identifies that the radiation doses to people living around nuclear licensed sites from authorised releases of radioactivity were well below the UK national and European limit of 1 millisievert (mSv) per year in	The RIFE report identifies that the radiation doses to people living around nuclear licensed sites from authorised releases of radioactivity were well below the UK national and European limit of 1 millisievert (mSv) per year in	The RIFE report identifies that the radiation doses to people living around nuclear licensed sites from authorised releases of radioactivity were well below the UK national and European limit of 1 millisievert (mSv) per year in	There are no nuclear licensed facilities in Northern Ireland. The RIFE report identifies through regional monitoring of consumer doses were all less than one per cent of the annual limit of one mSv ¹¹⁰ .

¹⁰⁶ Environment Agency (2020) *Monitoring radioactivity*. Available: <https://www.gov.uk/guidance/monitoring-radioactivity>

¹¹⁰ UK Government (2022) *Radioactivity in Food and the Environment, 2021*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1114928/RIFE-27-Radioactivity-in-food-and-the-environment-2021.pdf

	<p>2021. The highest doses of radiation received by the public in England were near Sellafield in the north west (0.21 mSv), Capenhurst in the north-west (0.17 mSv), and Amersham in the south-east (0.083 mSv). The high doses around Sellafield are found within consumers of locally caught crab and lobster, which have concentrations of polonium-210 which is attributed to discharges from the former phosphate processing plant at Whitehaven, rather than the nuclear site at Sellafield¹⁰⁷.</p>	<p>2021. The highest doses of radiation received by the public in Scotland were on the Dumfries and Galloway coast in the south west (0.056 mSv). This was found within consumers of fish, shellfish and wildfowl, and is attributed to discharges from the Sellafield site located in England¹⁰⁸.</p>	<p>2021. The highest doses of radiation received by the public in Wales was in Trawsfynydd in the north west (0.010 mSv). This was found in consumers of locally grown food and the site is currently being decommissioned¹⁰⁹.</p>	
	<p>Supporting Trend Data:</p> <p>During 2021, as a result of an ongoing programme of monitoring by the operator, radioactive items (particles, including contaminated pebbles / stones) from Sellafield were detected on Cumbrian coastline beaches and removed. Over a number of decades, concentrations of radioactivity in the environment around Sellafield have declined as a result of reduced discharges. Public Health England (PHE) has provided advice that the overall health risks for beach users from radioactive objects on</p>			

¹⁰⁷ UK Government (2022) *Radioactivity in Food and the Environment, 2021*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1114928/RIFE-27-Radioactivity-in-food-and-the-environment-2021.pdf

¹⁰⁸ UK Government (2022) *Radioactivity in Food and the Environment, 2021*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1114928/RIFE-27-Radioactivity-in-food-and-the-environment-2021.pdf

¹⁰⁹ UK Government (2022) *Radioactivity in Food and the Environment, 2021*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1114928/RIFE-27-Radioactivity-in-food-and-the-environment-2021.pdf

	beaches near Sellafield are very low and significantly lower than other risks that people accept when using the beaches. Fishing restrictions under the Food and Environment Protection Act (FEPA) 1985 are still in force ¹¹¹ .
Health and Well-Being: The Measuring National Well-being programme	<p>The Measuring National Well-being (MNW) programme set out to establish measures to understand and monitor national well-being¹¹².</p> <p>Mental well-being in adults aged 16 and over on average ranked 24.3 out of 35 in 2018/2019. This represents a deterioration over the short and long term. This varies across the UK as follows:</p> <ul style="list-style-type: none"> • England – 24.3 out of 35 • Wales – 23.9 out of 35 • Scotland – 24.4 out of 35 • Northern Ireland – 25.1 out of 35 <p>In April to June 2022, 33.1% of adults aged 16 and over rated how worthwhile they feel the things they do in life are as very high. This represents no change from the previous year but a deterioration since the same period in 2017. This varies across the UK as follows:</p> <ul style="list-style-type: none"> • England – 33.0% • Wales – 29.3% • Scotland – 32.8% • Northern Ireland – 42.2% <p>In April to June 2022, 32.3% of adults aged 16 and over rated their happiness yesterday as very high. This represents no change from the previous year but a deterioration since the same period in 2017. This varies across the UK as follows:</p> <ul style="list-style-type: none"> • England – 32.2% • Wales – 32.8% • Scotland – 31.7% • Northern Ireland – 34.9%

¹¹¹ UK Government (2022) *Radioactivity in Food and the Environment, 2021*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1114928/RIFE-27-Radioactivity-in-food-and-the-environment-2021.pdf

¹¹² Office for National Statistics (2019) *Measuring national well-being in the UK: international comparisons, 2019*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuringnationalwellbeing/2016>

	<p>In April to June 2022, 26.0% of adults in the UK rated their life satisfaction as very high. This represents no change from the previous year but a deterioration since the same period in 2017.</p> <p>In April 2020 to March 2021, it was reported that 6.47% people in England felt lonely often or always. Data was not available for the other regions within the UK.¹¹³</p> <p>The labour market shocks associated with the coronavirus pandemic have been felt more by young people and the lowest paid; people aged under 30 years and those with household incomes under £10,000 were around 35% and 60%, respectively, more likely to be furloughed than the general population. Measurements of health and well-being as a result of the coronavirus pandemic are still to be confirmed and indications of mental health issues such as anxiety are being preliminarily explored. The reliability of such data is unknown at this stage.</p> <p>Detailed studies of the health and well-being of populations surrounding new nuclear sites will need to undertaken at later stages.</p>
<p>Health and Well-Being:</p> <p>The English Index of Multiple Deprivation (IMD) 2019</p> <p>The Scottish Index of Multiple</p>	<p>The IMD is the official measure of relative deprivation for small areas (Lower-Area Super Output Areas) in England. The Index ranks every small area in England from 1 (most deprived) to 32,844 (least deprived)¹¹⁴.</p> <p>The SIMD shows where the most deprived areas in Scotland and is a relative measure of deprivation. Scotland is split into 6,976 zones with indicators measured including income, employment, education, health, access to services, crime and housing¹¹⁵.</p> <p>The WIMD is the official measure of relative deprivation for small areas in Wales. WIMD ranks all small areas in Wales from 1 (most deprived) to 1,909 (least deprived)¹¹⁶.</p> <p>The NIMDM comprises seven domains of deprivation, each developed to measure a distinct form or type of deprivation. This provides a mechanism for ranking the 890 Super Output areas (SOAs) from the most deprived (rank 1) to the least deprived (rank 890)¹¹⁷.</p>

¹¹³ Office for National Statistics (2022) *Measures of National Well-being Dashboard: Quality of Life in the UK*. Available: <https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/articles/measuresofnationalwellbeingdashboardqualityoflifeintheuk/2022-08-12>

¹¹⁴ Ministry of Housing, Communities and Local Government (2019) *English indices of deprivation 2019*. Available: <https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019>

¹¹⁵ Scottish Government (2020) *Scottish Index of Multiple Deprivation 2020*. Available: <https://www.gov.scot/collections/scottish-index-of-multiple-deprivation-2020/>

¹¹⁶ Welsh Government (2019) *Welsh Index of Multiple Deprivation*. Available: <https://statswales.gov.wales/Catalogue/Community-Safety-and-Social-Inclusion/Welsh-Index-of-Multiple-Deprivation>

¹¹⁷ Northern Ireland Statistics and Research Agency (2017) *Northern Ireland Multiple Deprivation Measure 2017 (NIMDM2017)*. Available: <https://www.nisra.gov.uk/statistics/deprivation/northern-ireland-multiple-deprivation-measure-2017-nimdm2017>

<p>Deprivation (SIMD) 2020</p> <p>The Welsh Index of Multiple Deprivation (WIMD) 2019</p> <p>Northern Ireland Multiple Deprivation Measure (NIMDM) 2017</p>	<p>The south east, south west and east of England are the least deprived areas in the UK. Deprivation increases in urban areas, with towns and cities generally being more deprived than rural areas. The north west and north east are the most deprived areas of England. Middlesbrough, Knowsley, Kingston upon Hull, Liverpool and Manchester are the five local authority districts with the largest proportions of highly deprived neighbourhoods in England.</p>	<p>The most deprived areas in Scotland are concentrated around the populated central areas of Glasgow, Edinburgh, Stirling, Perth, Kilmarnock and Dundee. Pockets of deprivation are also located in other urban centres throughout the country, such as Stranraer in the south west, Oban in the west and Aberdeen in the East. The islands of Shetland and the Orkneys are comparatively deprived to the majority of Scotland.</p>	<p>The south east and north east coast are the most deprived areas in Wales. Deprivation is most concentrated in the south east, around the urban areas of Cardiff, Newport, Swansea and Bridgend. The smaller towns within the valleys of the south east, such as Caerphilly and Merthyr Tydfil are similarly deprived. Comparatively the rural areas of Wales are considerably less deprived.</p>	<p>The most deprived areas of Northern Ireland are the urban centres of Belfast in the east and Derry in the north west. Deprivation is also recorded in rural areas, including around Cookstown in central Northern Ireland, Crossmaglen in the south and Strabane in the west. The lowest deprived areas are North Down, Fermanagh and South Tyrone, Strangford and South Antrim.</p>
<p>Supporting Trend Data:</p> <p>It is not advised to compare the deprivation measures across the UK as data definitions, collection methods and base populations are not the same across the devolved administrations.</p> <p>Overall, 88 per cent of neighbourhoods that are in the most deprived decile according to the Index of Multiple Deprivation 2019 (IMD2019) were also the most deprived according to the IMD2015. As was the case in previous versions of the Indices, IMD2019 reveals concentrations of deprivation in large urban conurbations, areas that have historically had large heavy industry manufacturing and/or mining sectors (such as Birmingham, Nottingham, Hartlepool), coastal towns (such as Blackpool or Hastings), and parts of east London. There are also pockets of deprivation surrounded by less deprived places in every region of England.</p> <p>Six council areas have a larger share of the 20% most deprived data zones in Scotland compared with SIMD 2016. Three council areas have a smaller share. The rest have changed by less than 2 percentage points. The councils with the largest decrease are Glasgow City, Renfrewshire, and City of Edinburgh. The councils with the largest increase are Aberdeen City, North Lanarkshire, Moray, East Lothian, Highland, and North Ayrshire.</p>				

	<p>In WIMD 2019, there were pockets of high relative deprivation in the South Wales cities and valleys, and in some North Wales coastal and border towns. The overall picture is similar to that of WIMD 2014. Seven of the ten most deprived areas from WIMD 2014 remained in the ten most deprived areas in WIMD 2019.</p> <p>Since 2005 there has been little change in the areas of worst deprivation within Northern Ireland.</p>			
Historic Environment: World Heritage Sites	<p>World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention and the sites are designated for their globally important cultural or natural interest and require appropriate management and protection measures¹¹⁸.</p> <p>The location of World Heritage Sites are shown in Figure 3.</p>			
	<p>There are 19 World Heritage Sites in England¹¹⁹:</p> <ul style="list-style-type: none"> • Blenheim Palace • Canterbury Cathedral, St Augustine's Abbey, and St Martin's Church • City of Bath • Cornwall and West Devon Mining Landscape • Derwent Valley Mills • Dorset and East Devon Coast • Durham Castle and Cathedral 	<p>There are five World Heritage Sites in Scotland¹²⁰:</p> <ul style="list-style-type: none"> • Heart of Neolithic Orkney • New Lanark • Old and New Towns of Edinburgh • St. Kilda • The Forth Bridge 	<p>There are three World Heritage Sites in Wales¹²¹:</p> <ul style="list-style-type: none"> • Blaenavon Industrial Landscape • Castles and Town Walls of King Edward in Gwynedd • Pontcysyllte Aqueduct and Canal 	<p>There is one World Heritage Site in Northern Ireland¹²²:</p> <ul style="list-style-type: none"> • Giant's Causeway and Causeway Coast

¹¹⁸ UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: <http://whc.unesco.org/en/statesparties/gb>

¹¹⁹ UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: <http://whc.unesco.org/en/statesparties/gb>

¹²⁰ UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: <http://whc.unesco.org/en/statesparties/gb>

¹²¹ UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: <http://whc.unesco.org/en/statesparties/gb>

¹²² UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: <http://whc.unesco.org/en/statesparties/gb>

	<ul style="list-style-type: none"> • Frontiers of the Roman Empire • Ironbridge Gorge • Jodrell Bank Observatory • Lake District • Liverpool – Maritime Mercantile City • Maritime Greenwich • Palace of Westminster and Westminster Abbey, including Saint Margaret's Church • Royal Botanic Gardens, Kew • Saltaire • Stonehenge, Avebury and Associated Sites • Studley Royal Park including the Ruins of Fountains Abbey • Tower of London 			
<p>Supporting Trend Data:</p> <p>The first World Heritage Sites within the UK were designated in 1986. Sites can continue to be nominated, with the last site on the UK mainland being the Jodrell Bank Observatory, designated in 2019. Of all the sites in the UK, only the Liverpool Maritime Mercantile City site has been placed on the List of World Heritage in Danger. The list presently comprises 53 sites in total worldwide. These are sites at which conditions are present to threaten the characteristics for which a site was placed on the World Heritage List¹²³.</p>				

¹²³ UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: <http://whc.unesco.org/en/statesparties/gb>

Historic Environment Scheduled Monuments	<p>Scheduling is the selection of nationally important archaeological sites which are legally protected. The monitoring and identification of sites is undertaken by Historic England. Scheduled Monuments cover the whole range of archaeological sites and are not always visible or above ground sites.</p> <p>The condition of Scheduled Monuments is monitored as part of Historic England's 'Heritage at Risk' programme. Local government archaeological services, plus independent national and local heritage organisations and community groups, can also play important roles in their curation, plus that of non-scheduled but nationally important monuments. It is to be noted that a monument not designated as a Scheduled Monument does not necessarily imply that it is not of national importance¹²⁴.</p> <p>The locations of Scheduled Monuments are shown in Figure 3 (England and Scotland).</p> <p><i>NB: No mapping data is available for Wales or Northern Ireland.</i></p>			
	As of 2021, there are almost 20,000 Scheduled Monuments located throughout England ¹²⁵ .	As of 2021, there are approximately 8,000 Scheduled Monuments located throughout Scotland ¹²⁶ .	As of 2021, there are over 4,000 Scheduled monuments located throughout Wales ¹²⁷ .	As of 2021, there are 1,901 Scheduled Monuments located throughout Northern Ireland ¹²⁸ .
	<p>Supporting Trend Data:</p> <p>Applications for sites to be Scheduled can be made at any time and is an ongoing process. Since 2007 the number of Scheduled Monuments has increased by approximately 2,000 in England, 400 in Wales and 163 in Northern Ireland. Wales has an ongoing planned policy of enhancing the number of sites on the Schedule.</p>			

¹²⁴ Department for Culture, Media and Sport (2013) *Scheduled Monuments & nationally important but non-scheduled monuments*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/249695/SM_policy_statement_10-2013_2_.pdf

¹²⁵ Historic England (2021) *Scheduled Monuments*. Available: <https://www.historicengland.org.uk/listing/what-is-designation/scheduled-monuments/>

¹²⁶ Historic Environment Scotland (2020) *Designations 2020 Onwards*. Available: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=e8d84fb0-7b16-49cc-a87a-abce00884e10>

¹²⁷ Lle (2021) *Scheduled Monuments*. Available: <http://lle.gov.wales/catalogue/item/ScheduledAncientMonumentsInWales?lang=enhttp://cadw.gov.wales/historicenvironment/protection/monuments/?lang=en>

¹²⁸ Department for Communities (2021) *Historic Monuments*. Available: <https://www.communities-ni.gov.uk/articles/scheduled-monuments>

<p>Historic Environment:</p> <p>Listed Buildings and Conservation Areas</p>	<p>Conservation Areas are designated for their special architectural and historic interest and were first designated in 1967 with now around 10,000 in England¹²⁹, over 600 in Scotland¹³⁰, approximately 60 in Northern Ireland¹³¹ and over 500 in Wales¹³². There are many different types including:</p> <ul style="list-style-type: none"> • the centres of our historic towns and cities • fishing and mining villages • 18th and 19th-century suburbs • model housing estates • country houses set in their historic parks • historic transport links and their environs, such as stretches of canal <p>Most Conservation Areas are designated by the local planning authority and as such are best identified on a local basis.</p> <p>Listing of buildings is concerned with recognising the buildings special architectural and historic interest, with a view to protecting the building, under the planning system for future generations to enjoy. All buildings built before 1700 which survive in anything like their original condition are listed, as are most of those built between 1700 and 1840. Particularly careful selection is required for buildings from the period after 1945. Usually a building has to be over 30 years old to be eligible for listing¹³³.</p> <p>There are three categories of listed building:</p> <ul style="list-style-type: none"> • Grade I buildings are of exceptional interest, only 2.5% of listed buildings are Grade I • Grade II* buildings are particularly important buildings of more than special interest; 5.8% of listed buildings are Grade II* • Grade II buildings are of special interest; 91.7% of all listed buildings are in this class and it is the most likely grade of listing for a home owner.
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¹²⁹ Historic England (2021) *What is a Conservation Area?*. Available: <https://historicengland.org.uk/listing/what-is-designation/local/conservation-areas/>

¹³⁰ Historic Environment Scotland (2021) *Living in a conservation area*. Available: <https://www.historicenvironment.scot/advice-and-support/your-property/owning-a-traditional-property/living-in-a-conservation-area/>

¹³¹ nidirect (2021) *Conservation areas and advice*. Available: <https://www.nidirect.gov.uk/articles/conservation-areas-and-advice>

¹³² Welsh Government (2021) *Conservation Areas*. Available: <https://cadw.gov.wales/advice-support/placemaking/legislation-and-guidance/conservation-areas>

¹³³ Historic England (2021) *Listed Buildings*. Available: <https://historicengland.org.uk/listing/what-is-designation/listed-buildings/>

	As noted by Historic England, the total number of listed buildings is unknown, but is estimated to be around 400,000 in England ¹³⁴ . There are over 30,000 in Wales ¹³⁵ , about 47,000 in Scotland ¹³⁶ and over 8,900 in Northern Ireland ¹³⁷ . Due to the numbers, listed buildings are best identified on a local basis.			
Historic Environment: Historic Battlefields	The purpose of the Register of Historic Battlefields in England is to offer protection through the planning system and to promote a better understanding of their significance and public enjoyment. If the site of a battle is to merit registration it has to have been an engagement of national significance, and to be capable of close definition on the ground. In Scotland, Historic Battlefields are listed in the Inventory of Historic Battlefields. The Inventory of Historic Battlefields in Wales is a non-statutory Inventory which means there is no primary legislation enacted to protect entire battlefields. Locations of Historic Battlefields in England and Scotland are shown in Figure 3.			
	As of 2021, there are 46 Registered Battlefields within England ¹³⁸ .	As of 2021, there are 42 sites on the Inventory of Historic Battlefields ¹³⁹ .	As of 2021, there are over 700 sites on the Inventory of Historic Battlefields in Wales ¹⁴⁰ .	There is no formal register of historic battlefields in Northern Ireland.
	Supporting Trend Data: Public consultation demonstrated strong public support for the recognition of the importance of historic battlefields in Wales and the inventory was only recently created following legislation introduced in 2016.			
Historic Environment:	The purpose of Registers of Historic Parks and Gardens in England is to encourage the protection of gardens, grounds and other open spaces which are of historic importance.			

¹³⁴ Historic England (2021) *Listed Buildings Identification and Extent*. Available: <https://historicengland.org.uk/advice/hpg/has/listed-buildings/#:~:text=There%20are%20around%20400%2C000%20listed,list%20buildings%20are%20Grade%20I>

¹³⁵ Lle (2021) *Listed Buildings*. Available: <https://lle.gov.wales/catalogue/item/ListedBuildings/?lang=en>

¹³⁶ Historic Environment Scotland (2021) *What is Listing?*. Available: https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/listed-buildings/what-is-listing/#listing-exclusions_tab

¹³⁷ Department for Communities (2021) *Listed Buildings – An Introduction*. Available: <https://www.communities-ni.gov.uk/articles/listed-buildings>

¹³⁸ Historic England (2021) *Registered Battlefields*. Available: <https://www.historicengland.org.uk/listing/what-is-designation/registered-battlefields/>

¹³⁹ Historic Environment Scotland (2020) *Designations 2020 Onwards*. Available: <https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=e8d84fb0-7b16-49cc-a87a-abce00884e10>

¹⁴⁰ Cadw (2016) *Historic Battlefields*. Available: <http://cadw.gov.wales/historicenvironment/protection/battlefields/?lang=en>

Registered Parks and Gardens	<p>Historic Environment Scotland maintains the Inventory of Gardens and Designed Landscapes which identifies historic grounds and designed landscapes intentionally laid out for artistic effect.</p> <p>In Wales, Cadw maintains the Register of Parks and Gardens of Special Historic Interest.</p> <p>In Northern Ireland, the Department for Communities maintains the Register of Historic Parks, Gardens and Demesnes.</p> <p>Locations of Parks and Gardens are shown in Figure 3 (England and Scotland).</p> <p><i>NB: No mapping data is available for Wales or Northern Ireland.</i></p>			
	As of 2021, there are over 1,600 Registered Historic Parks and Gardens within England ¹⁴¹ .	As of 2021, there are over 300 sites on the Inventory of Gardens and Designed Landscapes within Scotland ¹⁴² .	As of 2021, there are approximately 400 sites on the Register of Parks and Gardens of Special Historic Interest in Wales ¹⁴³ .	As of 2021, there are around 154 sites on the register of Historic Parks, Gardens and Demesnes in Northern Ireland. Additionally, a further 150 sites have been identified as having a high level of interest and are included as an appendix to the main Register as designated 'Supplementary' sites ¹⁴⁴ .
	Supporting trend data is not available.			
Historic Environment:	<p>Historic landscape characterisation (HLC) can be used to help secure good quality, well designed and sustainable places. It is a method of identification and interpretation of the varying historic character within an area that looks beyond individual</p>			

¹⁴¹ Historic England (2021) *Registered Parks & Gardens*. Available: <https://www.historicengland.org.uk/listing/what-is-designation/registered-parks-and-gardens/>

¹⁴² Historic Environment Scotland (2021) *Inventory of Gardens and Designed Landscapes*. Available: <https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/gardens-and-designed-landscapes/what-is-the-inventory-of-gardens-and-designed-landscapes/>

¹⁴³ Cadw (2021) *Understanding Registered Parks and Gardens*. Available: <https://cadw.gov.wales/advice-support/historic-assets/registered-historic-parks-and-gardens/understanding-registered#section-finding-out-about-registered-historic-parks-and-gardens>

¹⁴⁴ Department for Communities (2021) *Historic Parks, Gardens and Demesnes*. Available: <https://www.communities-ni.gov.uk/articles/historic-parks-gardens-and-demesnes>

Historic Landscape Characterisation	heritage assets as it brigades understanding of the whole landscape and townscape into repeating HLC Types ¹⁴⁵ . HLCs are typically held by the relevant local Historic Environment Record in England ¹⁴⁶ .			
Historic Environment: Areas of Archaeological Importance	The Ancient Monuments and Archaeological Areas Act 1979 allows the Government to designate as an area of archaeological importance any area which appears to merit treatment as such. In England there are five areas designated as areas of archaeological importance under the Ancient Monuments and Archaeological Areas Act 1979: the historic city centres of Canterbury, Chester, Exeter, Hereford and York ¹⁴⁷ .			
Historic Environment: Protected Wrecks	<p>The <u>Protection of Wrecks Act (1973)</u> allows the Government to designate a wreck to prevent uncontrolled interference. Designated sites are identified as being likely to contain the remains of a vessel, or its contents, which are of historical, artistic or archaeological importance¹⁴⁸.</p> <p>Locations of Protected Wrecks are shown in Figure 3 (England).</p> <p><i>NB: No mapping data is available for Scotland, Wales or Northern Ireland.</i></p>			
	There are 53 Protected Wreck sites in English waters as of 2017. The majority of these are located along the south coast ¹⁴⁹ .	There are 6 Wrecks of Wales. These are primarily located around the north west and north coast, with one being located off Pembrokeshire in the south west ¹⁵⁰ .	There are 18 Designated Wreck sites in Scottish waters. These are primarily located on coastal areas in the north-west ¹⁵¹ .	There is 1 Protected Wreck in Northern Irish waters, La Girona, which is located on the North Antrim coast ¹⁵² .

¹⁴⁵ Historic England (2021) *Historic Landscape Characterisation*. Available: <https://historicengland.org.uk/research/methods/characterisation/historic-landscape-characterisation/#Section4Text>

¹⁴⁶ Archaeology Data Service (2018) *Historic Landscape Characterisation* Available: <https://archaeologydataservice.ac.uk/archives/view/HLC/index.cfm>

¹⁴⁷ Historic England (2021) *Areas of Archaeological Importance*. Available: <https://historicengland.org.uk/advice/hpg/has/archaeologicalimportance/>

¹⁴⁸ Historic England (2021) *Protected Wreck Sites*. Available: <https://www.historicengland.org.uk/advice/planning/consents/protected-wreck-sites/>

¹⁴⁹ Historic England (2021) *Protected Wreck Sites*. Available: <https://www.historicengland.org.uk/advice/planning/consents/protected-wreck-sites/>

¹⁵⁰ Cadw (2021) *Marine historic environment*. Available: <https://cadw.gov.wales/advice-support/placemaking/legislation-and-guidance/marine-historic-environment>

¹⁵¹ Marine Scotland Information (2021) *Wrecks (HES)*. Available: <https://marinescotland.atkinsgeospatial.com/nmpi/default.aspx?layers=628>

¹⁵² Department for Communities (2021) *Shipwrecks*. Available: <https://www.communities-ni.gov.uk/articles/shipwrecks-0>

	<i>Supporting trend data is not available.</i>			
Historic Environment: Heritage at Risk	The Heritage at Risk Register includes buildings, places of worship, monuments, parks and gardens, conservation areas, battlefields and wreck sites that are listed and have been assessed and found to be at risk in England ¹⁵³ .			
Historic Environment: Non-Designated Heritage assets	There are a large number of heritage assets located across England and Wales, covering the full range of human activity and timeframes. Non-designated heritage assets are locally-identified 'buildings, monuments, sites, places, areas or landscapes identified by plan- making bodies as having a degree of heritage significance meriting consideration in planning decisions but which do not meet the criteria for designated heritage assets'. While these assets may not have been formally designated, this should not necessarily be taken as an indication of their merit – consideration of such assets and their setting should be made during any scheme design. Lists of non-designated heritage assets, as well as advice on how these should be considered in the local context, can be obtained from Local Authorities.			
Historic Environment: Registered Historic Landscapes	To recognise the value of historic landscapes and to raise awareness of their importance, Cadw has compiled a register of landscapes of historic interest in Wales. Cadw have identified 58 landscapes of outstanding or special historic interest, which we consider to be the best examples of different types of historic landscapes in Wales ¹⁵⁴ .			
Landscape: National Parks	<p>In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them.</p> <p>The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales. In addition, the Environment Act 1995 requires relevant authorities to have regard for nature conservation. Special Acts of Parliament may be used to establish statutory authorities for their management (e.g. the Broads Authority was set up through the Norfolk and Suffolk Broads Act 1988).</p>			

¹⁵³ <https://cadw.gov.wales/advice-support/historic-assets/conservation-areas-and-other-historic-assets/other-historic-assets-0>

¹⁵⁴ Historic England (2021) *Heritage at Risk Register*. Available: <https://historicengland.org.uk/advice/heritage-at-risk/search-register/>

<p>The National Parks (Scotland) Act 2000 enabled the establishment of National Parks in Scotland. In addition to the two purposes described above, National Parks in Scotland are designated to promote the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. These purposes have equal weight and are to be pursued collectively unless conservation interests are threatened. Where these aims conflict, the relevant National Park authority must prioritise the first of these aims.¹⁵⁵</p> <p>Note that every National Park is required to prepare and publish a National Park Management Plan which formulates its policy for the management of the relevant National Park and for the carrying out of its functions in relation to that National Park and note needs to be made of these in relation to any National Park that may be affected.</p> <p>Locations of National Parks within England, Scotland and Wales are shown in Figure 4.</p>			
<p>There are 10 National Parks in England¹⁵⁶:</p> <ul style="list-style-type: none">• Broads• Dartmoor• Exmoor• Lake District• New Forest• Northumberland• North York Moors• Peak District• South Downs• Yorkshire Dales	<p>There are two National Parks in Scotland¹⁵⁷:</p> <ul style="list-style-type: none">• Cairngorms• Loch Lomond and the Trossachs	<p>There are three National Parks in Wales¹⁵⁸:</p> <ul style="list-style-type: none">• Brecon Beacons• Pembrokeshire Coast• Snowdonia	<p>There are currently no National Parks within Northern Ireland.</p>
<p>Supporting Trend Data:</p>			

¹⁵⁵ NatureScot (2021) *National Park*. Available: <https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/national-designations/national-park>

¹⁵⁶ National Parks UK (2021) *Your National Parks*. Available: <https://www.nationalparks.uk/parks/>

¹⁵⁷ National Parks UK (2021) *Your National Parks*. Available: <https://www.nationalparks.uk/parks/>

¹⁵⁸ National Parks UK (2021) *Your National Parks*. Available: <https://www.nationalparks.uk/parks/>

	<p>The designation of National Parks is an ongoing process with two being added in England since 2008 (South Downs and Broads). Within Northern Ireland there are proposals to create a National Park within the Mourne Mountains¹⁵⁹.</p>
<p>Landscape:</p> <p>Areas of Outstanding Natural Beauty (AONBs) and National Scenic Areas</p>	<p>In England, Wales and Northern Ireland, the primary purpose of the AONB designation is to conserve natural beauty – which by statute includes wildlife, physiographic features and cultural heritage as well as the more conventional concepts of landscape and scenery. Account is taken of the need to safeguard agriculture, forestry and other rural industries and the economic and social needs of local communities. AONBs have equivalent status to National Parks as far as conservation is concerned.</p> <p>AONBs are designated under the National Parks and Access to the Countryside Act 1949, amended in the Environment Act 1995. The Countryside and Rights of Way Act 2000 clarifies the procedure and purpose of designating AONBs¹⁶⁰.</p> <p>Originally designated in Northern Ireland under the Amenity Lands Act (Northern Ireland) 1965, AONBs are now designated under the Nature Conservation and Amenity Lands Order (Northern Ireland) 1985¹⁶¹.</p> <p>National Scenic Areas (NSAs) are designated by Scottish Ministers as the best of Scotland's landscapes, deserving special protection in the nation's interest. Scottish Ministers in 2010 confirmed 40 NSAs under the provisions of The Town and Country Planning (Scotland) Act 1997 (as amended in 2006) (s.263)¹⁶². NSAs are broadly equivalent to the AONBs found in England, Wales and Northern Ireland.</p> <p>Locations of AONBs and NSAs are in Figure 4.</p>

¹⁵⁹ Northern Ireland Assembly (2008) Potential Impacts of National Parks Designation with Particular Reference to The Proposed Mournes National Park. Available: http://archive.niassembly.gov.uk/environment/2007mandate/Research/0801National%20Parks%20_Mournes_.pdf

¹⁶⁰ Natural England (2018) *Areas of outstanding natural beauty (AONBs): designation and management*. Available: <https://www.gov.uk/guidance/areas-of-outstanding-natural-beauty-aonbs-designation-and-management>

¹⁶¹ Department of Agriculture, Environment and Rural Affairs Northern Ireland (2020) Council for Nature Conservation and the Countryside. Available: <https://www.daera-ni.gov.uk/articles/council-nature-conservation-and-countryside>

¹⁶² NatureScot (2017) *National Scenic Areas: background, guidance and policy*. Available: <https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/national-designations/national-scenic-areas/national-scenic-areas-background-guidance>

	<p>There are 34 AONBs located within England¹⁶³:</p> <p>NB: the Wye Valley is on the England / Wales border.</p> <ul style="list-style-type: none"> • <u>Arnside & Silverdale</u> • <u>Blackdown Hills</u> • <u>Cannock Chase</u> • <u>Chichester Harbour</u> • <u>Chilterns</u> • <u>Cornwall</u> • <u>Cotswolds</u> • <u>Cranborne Chase and West Wiltshire Downs</u> • <u>Dedham Vale</u> • <u>Dorset</u> • <u>East Devon</u> • <u>Forest of Bowland</u> • <u>Howardian Hills</u> • <u>High Weald</u> • <u>Isle of Wight</u> • <u>Isles of Scilly</u> • <u>Kent Downs</u> • <u>Lincolnshire Wolds</u> • <u>Malvern Hills</u> • <u>Mendip Hills</u> • <u>Norfolk Coast</u> • <u>North Devon</u> • <u>North Pennines</u> 	<p>There are 40 National Scenic Areas within Scotland¹⁶⁴:</p> <ul style="list-style-type: none"> • East Stewartry Coast • Fleet Valley • Nith Estuary • Eildon and Leaderfoot • Upper Tweeddale • North Arran • Jura • Knapdale • Kyles of Bute • Loch na Keal, Isle of Mull • Lynn of Lorn • Scarba, Lunga and the Garvellachs • Loch Rannoch & Glen Lyon • Loch Tummel • River Earn (Comrie to St. Fillans) • River Tay (Dunkeld) • Hoy & West Mainland • Shetland • Assynt-Coigach • Ben Nevis and Glen Coe • Cuillin Hills • Dornoch Firth 	<p>There are four AONBs within Wales¹⁶⁵:</p> <ul style="list-style-type: none"> • Clwydian Range and Dee Valley • Gower • Llyn • Anglesey 	<p>There are eight AONBs within Northern Ireland¹⁶⁶:</p> <ul style="list-style-type: none"> • <u>Antrim Coast and Glens</u> • <u>Causeway Coast</u> • <u>Lagan Valley</u> • <u>Mourne</u> • <u>Binevenagh</u> • <u>Ring of Gullion</u> • <u>Sperrin</u> • <u>Strangford Lough</u>
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¹⁶³ The National Association of Areas of Outstanding Natural Beauty (2017) *Areas of Outstanding Natural Beauty*. Available: <http://www.landscapesforlife.org.uk/>

¹⁶⁴ NatureScot (2010) *National Scenic Areas of Scotland: maps*. Available: <https://www.gov.scot/publications/national-scenic-areas-of-scotland-maps/>

¹⁶⁵ The National Association of Areas of Outstanding Natural Beauty (2017) *Areas of Outstanding Natural Beauty*. Available: <http://www.landscapesforlife.org.uk/>

¹⁶⁶ The National Association of Areas of Outstanding Natural Beauty (2017) *Areas of Outstanding Natural Beauty*. Available: <http://www.landscapesforlife.org.uk/>

	<ul style="list-style-type: none"> • <u>North Wessex Downs</u> • <u>Nidderdale</u> • <u>Northumberland Coast</u> • <u>Quantock Hills</u> • <u>Shropshire Hills</u> • <u>Solway Coast</u> • <u>South Devon</u> • <u>Suffolk Coast and Heaths</u> • <u>Surrey Hills</u> • <u>Tamar Valley</u> • Wye Valley (England and Wales) 	<ul style="list-style-type: none"> • Glen Affric • Glen Strathfarrar • Kintail • Knoydart • Kyle of Tongue • Loch Shiel • Morar, Moidart and Ardnamurchan • North-West Sutherland • Small Isles • Trotternish • Wester Ross • South Lewis, Harris and North Uist • South Uist Machair • St. Kilda • Loch Lomond • The Trossachs • Cairngorm Mountains • Deeside & Lochnagar 		
	<i>Supporting trend data is not available.</i>			
Landscape: Heritage Coasts (England and Wales)	<p>A Heritage Coast is a section of coast exceeding one mile in length that is of exceptionally fine scenic quality, substantially undeveloped and containing features of special significance and interest. The designation is agreed between local authorities and (in England) Natural England or (in Wales) Natural Resources Wales, as an aid to local authorities in planning and managing their coastlines¹⁶⁷.</p> <p>The locations of Heritage Coasts are shown in Figure 4.</p>			

¹⁶⁷ Natural England (2015) *Heritage coasts: definition, purpose and Natural England's role*. Available: <https://www.gov.uk/government/publications/heritage-coasts-protecting-undeveloped-coast/heritage-coasts-definition-purpose-and-natural-englands-role>

	<p>There are 32 Heritage Coasts located around England¹⁶⁸:</p> <ul style="list-style-type: none"> • Sussex • Pentire - Widemouth • Isles Of Scilly • Hartland (Cornwall) • North Norfolk • South Devon • Suffolk • Spurn • N Yorks & Cleveland Hamstead • Purbeck • Tennyson • West Dorset • Flamborough Head • East Devon • Hartland (Devon) • Rame Head • Lundy • Gribbin Head • Exmoor • The Roseland • St Bees Head • The Lizard • Northumberland • Penwith • North Devon • Godrevy – Portreath 	<p>There are no areas of Heritage Coast in Scotland.</p>	<p>There are 14 Heritage Coasts located around Wales¹⁶⁹:</p> <ul style="list-style-type: none"> • Aberffraw Bay • Ceredigion • Dinas Head • Glamorgan • Gower • Great Orme • Holyhead Mountain • Llŷn • Marloes and Dale • North Anglesey • St Bride's Bay • St David's Peninsula • St Dogmaels and Moylgrove • South Pembrokeshire 	<p>There are no areas of Heritage Coast in Northern Ireland.</p>
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¹⁶⁸ Natural England (2015) *Heritage coasts: definition, purpose and Natural England's role*. Available: <https://www.gov.uk/government/publications/heritage-coasts-protecting-undeveloped-coast/heritage-coasts-definition-purpose-and-natural-englands-role>

¹⁶⁹ Natural Resources Wales (2021) *Heritage Coasts*. Available: <https://lle.gov.wales/catalogue/item/ProtectedSitesHeritageCoast/?lang=en>

	<ul style="list-style-type: none"> • South Foreland • St Agnes • Dover-Folkestone • Trevoise Head • Durham 			
	Supporting trend data is not available.			
Landscape: Landscape Character Areas	Landscape Character Areas or Landscape Character Assessments encompass various aspects of landscape, biodiversity, heritage, cultural and geological features. These are non-statutory and used as an aid in the planning process and for decision making.			
	Natural England has produced National Character Area Profiles (NCAs) ¹⁷⁰ which divide England into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity, history, and cultural and economic activity. Their boundaries follow natural lines in the landscape rather than administrative boundaries. They can be	The Landscape Character Assessment in Scotland 300 distinct landscape character types, which are aggregated into 53 types for a strategic overview. These are used to inform development plans and decision making on proposed developments ¹⁷¹ .	Natural Resources Wales uses the LANDMAP tool to evaluate landscape characteristics. This includes geological landscape, landscape habitats, visual and sensory, historic landscape and cultural landscape ¹⁷² . Although no specific defined Landscape Character Areas are identified, LANDMAP is used	The Northern Ireland Landscape Character Assessment subdivides the countryside into 130 Landscape Character Areas, each based upon local patterns of geology, landform, land use, cultural and ecological features ¹⁷³ .

¹⁷⁰ Natural England (2014) *National Character Area profiles: data for local decision making*. Available: <https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making>

¹⁷¹ NatureScot (2019) *Landscape Character Assessment in Scotland*. Available: <https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/landscape-character-assessment-scotland>

¹⁷² Natural Resources Wales (2021) *LANDMAP – the Welsh landscape baseline*. Available: <https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/evidence-to-inform-development-planning/landmap-the-welsh-landscape-baseline/?lang=en>

¹⁷³ Department of Agriculture, Environment and Rural Affairs (2017) *Landscape Character of Northern Ireland*. Available: <https://www.daera-ni.gov.uk/articles/landscape-character-northern-ireland>

	used for planning and development.		to inform planning, policy and strategies.	
	<i>Supporting trend data is not available.</i>			
Landscape: National Character Area	<p>National Character Areas are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment. National Character Area profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain inform the delivery of nature improvement areas and encourage broader partnership working through local nature partnerships.</p> <p>National Seascape Character Areas are also defined to support decision making through the marine planning process. Visual, cultural, historical and archaeological impacts are considered for all coastal areas alongside wider social and economic impacts of development or activity on coastal landscapes and seascapes.</p>			
	<p>See text for Landscape Character Areas</p> <p>In England four Seascape Character Assessments are published for the north east, north west, south east and south west marine plan areas and comprise marine character areas profiles.</p>	<p>Scotland has a digital map-based national Landscape Character Assessment which shows Landscape Character Types and produced a series of 30 regional LCA studies which identify, map and describe the landscape character of all of Scotland.</p> <p>Coastal Character Assessment is defined in Scotland as the process of identifying and describing Scotland's diverse coasts. Thirteen National Coastal Character Types have been identified, most recently the Orkney and north Caithness</p>	<p>Wales defines 48 National Landscape Character Areas (NLCAs) which highlight what distinguishes one landscape from another, with reference to their regionally distinct natural, cultural and perceptual characteristics.</p> <p>Wales identifies National Marine Character Areas which highlight the key natural, cultural and perceptual influences that make the character of each seascape distinct and unique. Wales inshore waters are</p>	<p>Northern Ireland provides a strategic overview of the landscape and subdivides the countryside into 26 Regional Landscape Character Areas based upon information on people and place and the combinations of nature, culture and perception which make each part of Northern Ireland unique.</p> <p>NI defines 24 different regional seascape character areas around the coast which describe the key features and characteristics of each seascape character area.</p>

		characterisation added in 2016	divided into 29 Marine Character Areas.	
Tranquility Tranquil places	Defined as the quality of calm experienced in places with mainly natural features and activities, free from disturbance from manmade ones. Mapping designed to show the level of tranquility across the UK has been generated, mapping places where and helping Councils to develop national tranquility policies.			
	In England, The Countryside Charity (CPRE) have derived a National map which identifies most and least tranquil places.	While no tranquility mapping has been identified Scottish Natural Heritage has focussed on the concepts of 'wilderness' and 'wildlands' in Scotland with a Policy Statement on Wildness in Scotlands Countryside and the publication of a map of Wild Land Areas in 2014.	Natural Resources Wales provide map of the land of Wales, graded to show levels of Tranquillity. It results from combining several underlying layers of data, covering different factors that either contribute to tranquillity or detract from tranquillity. Produced to provide a strategic baseline for monitoring change in tranquillity in Wales to inform strategic planning and policy-making. 55% of Wales was identified as tranquil in 2009 but 1500km ² of tranquil landscapes were lost in the preceding 12 years ¹⁷⁴ .	There does not appear to be any record of tranquility mapping having been undertaken in Northern Ireland.
Dark Sky Reserves	An IDA International Dark Sky Reserve is a public or private land possessing an exceptional or distinguished quality of starry nights and nocturnal environment that is specifically protected for its scientific, natural, educational, cultural, heritage and/or public enjoyment. Reserves consist of a core area meeting minimum criteria for sky quality and natural darkness, and a			

¹⁷⁴ <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2017/02/Tranquillity-An-Overview-1-DH.pdf>

	peripheral area that supports dark sky preservation in the core. Reserves are formed through a partnership of multiple land managers who have recognized the value of the natural night time environment through regulations and long-term planning.			
	<p>The IDA identify the following Dark Sky Reserves in England:</p> <ul style="list-style-type: none"> - Cranborne Chase - Exmoor National Park - Moore's Reserve - North York Moors - Yorkshire Dales National Park 	<p>The IDA identify the following Dark Sky Reserves in Scotland:</p> <ul style="list-style-type: none"> - Galloway Forest Park 	<p>The IDA do not identify any Dark Sky Reserves in Wales:</p> <ul style="list-style-type: none"> - Brecon Beacons National Park - Snowdonia National Park 	<p>The IDA do not identify any Dark Sky Reserves in Northern Ireland however OM Dark Sky Park is noted as accredited as an International Dark Sky Park. This covers Davagh Forest in the landscape of the Sperrin's.</p>
<p>Air Quality:</p> <p>Location of Air Quality Management Areas (AQMA's)</p> <p>Air Pollution Information System</p>	<p>Since December 1997 each local authority in the UK must review and assess air quality in their area to determine performance against national air quality objectives. Where air quality objectives are not likely to be achieved an AQMA must be declared. AQMA's are typically associated with vehicle emissions, principally oxides of nitrogen (NO_x), oxides of sulphur (SO₂) and particulates (PM₁₀). As such, AQMA's are predominantly associated with urban areas and the road network¹⁷⁵.</p> <p>The locations of AQMA's are shown in Figure 5.</p> <p>The Air Pollution Information System provides a searchable database and information on pollutants and their impacts on habitats and species. The APIS provides pollution impact records for a variety of habitats, ecosystems and species. Each record contains information on key impacts including any critical loads or levels and a full reference list</p>			
	As of February 2021, there were 526 AQMA's in England ¹⁷⁶ . AQMA's are	As of February 2021, there were 41 AQMA's in Scotland ¹⁷⁷ . The majority of	As of February 2021, there were 44 AQMA's in Wales ¹⁷⁸ . These are all located in the	As of February 2021, there were 19 AQMA's in Northern Ireland ¹⁷⁹ . These are located

¹⁷⁵ Department for Environment and Rural Affairs (2016) *Current AQMA's by Source*. Available: <https://uk-air.defra.gov.uk/aqma/summary>

¹⁷⁶ Department for Environment and Rural Affairs (2016) *AQMA's interactive map and AQMA Summary Data*. Available: <https://uk-air.defra.gov.uk/aqma/maps>

¹⁷⁷ Scottish Air Quality (2021) *Air Quality Management Areas*. Available: <http://www.scottishairquality.scot/laqm/aqma>

¹⁷⁸ Welsh Government (2021) *Air Quality Management Areas*. Available: <https://airquality.gov.wales/laqm/air-quality-management-areas>

¹⁷⁹ Department of Agriculture, Environment and Rural Affairs (2021) Northern Ireland Air, Air Quality Management Areas. Available: <https://www.airqualityni.co.uk/laqm/aqma>

	<p>distributed throughout England, although they are principally located in areas of high population. The largest AQMAs are within major cities, including London, Birmingham, Manchester, Liverpool, Sheffield and Bristol. A significant amount of AQMAs are designated along major trunk roads and are generally associated with areas of high congestion.</p>	<p>these are located in the south of the country and are associated with the larger cities of Glasgow, Edinburgh, Falkirk, Perth and Dundee. Outside of these areas, Aberdeen and Inverness, on the east coast, have designated AQMAs. The north, highlands and west coast do not have any AQMAs.</p>	<p>south of the country. The largest AQMAs are within Swansea and Port Talbot, on the south coast. Smaller AQMAs are within Cardiff, Newport and the smaller towns within the valleys between the M4 corridor and the Brecon Beacons. These small AQMAs are associated with congestion within the town centres.</p>	<p>in the east, west south and central regions. The urban areas of Belfast in the east, Newry in the south and Strabane in the west have the largest AQMAs. Smaller AQMAs, associated with congestion in town centres, are located throughout east, west and south Northern Ireland.</p> <p>As the NPS applies to England & Wales only, it is anticipated that there are no implications for the air quality of Northern Ireland in terms of AQMA as these have been declared for the most part in relation to the impact of emissions from road traffic.</p>
<p><i>Supporting Trend Data:</i></p> <p>The quality of our air in the UK has improved considerably over the last decade. Road transport is a key source of many air pollutants, particularly in urban areas. There are two main trends in the transport sector working in opposite directions: new vehicles are becoming individually cleaner in response to European emission standards legislation, but total vehicle kilometres are increasing. Overall emissions of key air pollutants from road transport have fallen by about 50% over the last decade, despite increases in traffic, and are expected to reduce by a further 25% over the next decade. This is mainly a result of progressively tighter vehicle emission and fuel standards agreed at European level and set in UK regulations¹⁸⁰.</p>				

¹⁸⁰ Department for Environment and Rural Affairs (2011) *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland - Volume 1*. Available: <https://www.gov.uk/government/publications/the-air-quality-strategy-for-england-scotland-wales-and-northern-ireland-volume-1>

Soils, Geology, and Land Use: Location of Geological SSSIs / ASSIs	<i>Geological SSSIs / ASSIs are included within the SSSI / ASSI information provided in Biodiversity and Ecology.</i>			
Soils, Geology, and Land Use: National Soil Maps	<p>Maps delineating soil types across respective regions have been published and draw from survey work and GIS techniques. In respect of the England and Wales resource the maps include soils, developed from the more detailed national soil map and a series of thematic soil properties including carbon, metal binding capacity and native woodland models.</p> <p>The maps are developed with the purpose of effectively communicating a general understanding of the variations that occur between soil types and how soils affect the environment.</p>			
	NATMAP (National Soil Map) is derived from the National Soil Map for England and Wales and is the product of sixty years of soil survey work in England and Wales.	National coverage of the main soil types across Scotland mapped originally at 1:250 000 scale a National Soil Map of Scotland is based on data collected between 1947 and 1981.	NATMAP (National Soil Map) is derived from the National Soil Map for England and Wales and is the product of sixty years of soil survey work in England and Wales.	The World Reference Base map shows the locations of the nine reference soil groups recognised in Northern Ireland. It is derived from the general soil map of Northern Ireland at 1:250 000 scale, held by the Agri-Food and Biosciences Institute (AFBI).
Soils, Geology, and Land Use: Contaminated Land	Of particular note across England and Wales are the numerous contaminated sites that are a legacy of current or past industrial activities. Typically, contaminated land would be found in urban areas and along major transport links, though many sites are also found in rural or coastal areas. While many sites are known, it is the case that many contaminated sites (their location and the nature of contamination) remain unknown. In England, arsenic, lead and benzo(a)pyrene are the most common substances causing contamination of land identified under Part 2A of the Environmental Protection Act 1990 ¹⁸¹ .			

¹⁸¹ Environment Agency (2016) *Dealing with contaminated land in England*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/513158/State_of_contaminated_land_report.pdf

	<p>Across the United Kingdom, land is legally defined as ‘contaminated land’ where substances are causing or could cause¹⁸²:</p> <ul style="list-style-type: none"> • Significant harm to people, property or protected species • Significant pollution of surface waters or groundwater • Harm to people as a result of radioactivity <p>Some types of contaminated land are classed as ‘special sites’. This includes land that:</p> <ul style="list-style-type: none"> • seriously affects drinking waters, surface waters or important groundwater sources • has been, or is being, used for certain industrial activities, such as oil refining or making explosives • is being or has been regulated using a permit issued under the integrated pollution control or pollution prevention and control regimes • has been used to get rid of waste acid tars • is owned or occupied by the Ministry of Defence • is contaminated by radioactivity • is a nuclear site <p>Determination of contaminated land is made in the UK by a local council or the relevant environment agency and is best identified on a local or regional basis. It is however important to note that there will be lots of brownfield sites which are contaminated and require remediation but have not been formally designated. They will have not been assessed for designation or don’t meet the threshold for designation but still pose a risk of pollution and harm.</p> <p>Local authorities maintain the Public Registers for the ordinary contaminated land in their area.</p>			
Soils, Geology, and Land Use: Geoparks	<p>Geoparks are endorsed by UNESCO and are not designated under legislation. They are locally led partnerships within areas of internationally significant geology that work to support sustainable economic development of the area, primarily through geological and eco-tourism¹⁸³.</p> <p><i>NB: No mapping data on Geoparks is available.</i></p>			
	<p>There are currently three Geoparks in England, the English Riviera, located in the south of Devon in the south west, the North Pennines,</p>	<p>There are currently two Geoparks in Scotland, the North West Highlands, located in the north, and</p>	<p>There are currently two Geoparks Wales, Fforest Fawr, located in the Brecon Beacons in the south, and GeoMon, which</p>	<p>There is currently one Geopark in Northern Ireland,</p>

¹⁸² UK Government (2021) *Contaminated Land*. Available: <https://www.gov.uk/contaminated-land>

¹⁸³ United Kingdom National Commission for UNESCO (2021) *Global Geoparks*. Available: <http://www.unesco.org.uk/designation/geoparks/>

	between Cumbria and Northumberland in the north, and the Black Country located in the Midlands ¹⁸⁴ .	Geopark Shetland, within the Shetland Islands ¹⁸⁵ .	encompasses the island of Anglesey in the north west ¹⁸⁶ .	Marble Arch Caves, in the south west of the country ¹⁸⁷ .
	<i>Supporting trend data is not available.</i>			
Water Quality and Resources: Water Framework Directive (WFD)	<p>The EU WFD is transposed into UK law through the following regulations: The Water Environment (WFD) (England and Wales) Regulations 2017 for England and Wales; the Water Environment and Water Services (Scotland) Act 2003 (WEWS Act) and The Water Environment (WFD) Regulations (Northern Ireland) 2003) for Northern Ireland.</p> <p>The purpose of the Directive is to establish a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters and groundwater. Groundwater is an important natural resource that supports river flows as well as ecological diversity in rivers, lakes and wetlands. It is also available for use, across the United Kingdom, for water supply by abstraction from boreholes, wells and springs.</p> <p>All EU member states aim to ensure that all aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands reach 'good' chemical and ecological status by 2027.</p> <p>The WFD specifies the quality elements that can be used to assess the surface water status of a water body. Quality elements can be biological (e.g. fish, invertebrates, plants), chemical (e.g. heavy metals, pesticides, nutrients) or indicators of the condition of the habitats and water flows and levels (e.g. presence of barriers to fish migration, modelled lake level data) (JNCC 2010¹⁸⁸).</p> <p>Note will also be made in the AoS of each site of the terms of the Environmental Permitting Regulations (England and Wales) 2018.</p>			
	As of 2019, in England, the quality status of water bodies	As of 2019, in Scotland, the quality status of water bodies	As of 2019, in Wales, the quality status of water bodies	As of 2019, in Northern Ireland, the quality status of

¹⁸⁴ United Kingdom National Commission for UNESCO (2021) *Global Geoparks*. Available: <http://www.unesco.org.uk/designation/geoparks/>

¹⁸⁵ United Kingdom National Commission for UNESCO (2021) *Global Geoparks*. Available: <http://www.unesco.org.uk/designation/geoparks/>

¹⁸⁶ United Kingdom National Commission for UNESCO (2021) *Global Geoparks*. Available: <http://www.unesco.org.uk/designation/geoparks/>

¹⁸⁷ Marble Arch Caves Global Geopark (2021) *Our Geopark*. Available: <http://www.marblearchcavesgeopark.com/our-global-geopark/>

¹⁸⁸ Joint Nature Conservation Committee (2010) *Council Directive 2000/60/EC establishing a framework for Community action in the field of water policy (Water Framework Directive)*. Available: <http://jncc.defra.gov.uk/page-1375>

	<p>assessed under the WFD were¹⁸⁹:</p> <p>Lakes:</p> <p>High – 0%</p> <p>Good – 16%</p> <p>Moderate – 71%</p> <p>Poor – 11%</p> <p>Bad – 1%</p> <p>Rivers and Canals:</p> <p>High – 0%</p> <p>Good – 15%</p> <p>Moderate – 62%</p> <p>Poor – 19%</p> <p>Bad – 3%</p> <p>Estuaries and Coastal:</p> <p>High – 1%</p> <p>Good – 28%</p> <p>Moderate – 65%</p> <p>Poor – 2%</p> <p>Bad – 4%</p> <p>As of 2015, in England, the quality status of groundwater</p>	<p>assessed under the WFD were¹⁹¹:</p> <p>Lakes:</p> <p>High – 31%</p> <p>Good – 38%</p> <p>Moderate – 20%</p> <p>Poor – 10%</p> <p>Bad – 1%</p> <p>Rivers and Canals:</p> <p>High – 7%</p> <p>Good – 48%</p> <p>Moderate – 24%</p> <p>Poor – 16%</p> <p>Bad – 5%</p> <p>Estuaries and Coastal:</p> <p>High – 30%</p> <p>Good – 68%</p> <p>Moderate – 1%</p> <p>Poor – 0%</p> <p>Bad – 0%</p> <p>As of 2015, in Scotland Ireland, the quality status of</p>	<p>assessed under the WFD were¹⁹³:</p> <p>Lakes:</p> <p>High – 1%</p> <p>Good – 19%</p> <p>Moderate – 67%</p> <p>Poor – 13%</p> <p>Bad – 0%</p> <p>Rivers and Canals:</p> <p>High – 0%</p> <p>Good – 44%</p> <p>Moderate – 47%</p> <p>Poor – 8%</p> <p>Bad – 1%</p> <p>Estuaries and Coastal:</p> <p>High – 2%</p> <p>Good – 22%</p> <p>Moderate – 75%</p> <p>Poor – 2%</p> <p>Bad – 0%</p> <p>As of 2015, in Wales, the quality status of groundwater</p>	<p>water bodies assessed under the WFD were¹⁹⁵:</p> <p>Lakes:</p> <p>High – 0%</p> <p>Good – 24%</p> <p>Moderate – 29%</p> <p>Poor – 33%</p> <p>Bad – 14%</p> <p>Rivers and Canals:</p> <p>High – 0%</p> <p>Good – 31%</p> <p>Moderate – 57%</p> <p>Poor – 9%</p> <p>Bad – 2%</p> <p>Estuaries and Coastal:</p> <p>High – 0%</p> <p>Good – 40%</p> <p>Moderate – 56%</p> <p>Poor – 4%</p> <p>Bad – 0%</p> <p>As of 2020, in Northern Ireland, the quality status of</p>
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¹⁸⁹ Joint Nature Conservation Committee (2020) B7. Surface Water Status. Available: <http://jncc.defra.gov.uk/page-4250>

¹⁹¹ Joint Nature Conservation Committee (2020) B7. Surface Water Status. Available: <http://jncc.defra.gov.uk/page-4250>

¹⁹³ Joint Nature Conservation Committee (2020) B7. Surface Water Status. Available: <http://jncc.defra.gov.uk/page-4250>

¹⁹⁵ Joint Nature Conservation Committee (2020) B7. Surface Water Status. Available: <http://jncc.defra.gov.uk/page-4250>

	<p>bodies assessed under the WFD were¹⁹⁰:</p> <p>Quantitative Status: Good - 69% Poor – 31%</p> <p>Chemical Status: Good – 53% Poor – 47%</p>	<p>groundwater bodies assessed under the WFD were¹⁹²:</p> <p>Overall Status: Good - 83% Poor – 17%</p>	<p>bodies assessed under the WFD were¹⁹⁴:</p> <p>Quantitative Status: Good - 100% Poor – 0%</p> <p>Chemical Status: Good – 58% Poor – 42%</p>	<p>groundwater bodies assessed under the WFD were¹⁹⁶:</p> <p>Overall Status: Good - 63% Poor – 12%</p>
	<p>Supporting Trend Data:</p> <p>The number of waterbodies assessed each year varies and has decreased from 10,761 in 2009 to 9,300 in 2018. There was a small decrease in the overall number of water bodies awarded high or good surface water status between 2009 and 2018. In 2018, 35% of surface water bodies assessed under the WFD in the UK were in high or good status. This reflects very little change from 36% of surface water bodies assessed in 2009 and 37% in 2013¹⁹⁷.</p>			
<p>Water Quality and Resources</p> <p>River Basin Management Plans</p>	<p>River basin management plans (RBMPs) set out how organisations, stakeholders and communities will work together to improve the water environment. A RBD covers an entire river system, including river, lake, groundwater, estuarine and coastal water bodies. RBD RBMPs are designed to protect and improve the quality of the water environment. Good quality water is essential for wildlife, agriculture and businesses to thrive. It boosts regeneration (both structural and economic), recreation and tourism.</p>			
	In England there are eight river basin district RBMPs	In December 2020 SEPA published the consultations	In Wales RBMPs are updated on a six yearly cycle and are	In 2009 the first set of River Basin Management Plans

¹⁹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/514944/National_evidence_and_data_report.pdf

¹⁹² <https://www.sepa.org.uk/data-visualisation/water-classification-hub/>

¹⁹⁴ <https://cdn.cyfoethnaturiol.cymru/media/676155/progress-report-for-wales-2009-2015-english.pdf?mode=pad&rnd=131596369400000000>

¹⁹⁶ <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/Northern%20Ireland%20Water%20Framework%20Directive%20Groundwater%20Update%202020.pdf>

¹⁹⁷ Joint Nature Conservation Committee (2019) *Surface Water Status – Datasheet*. Available: http://jncc.defra.gov.uk/docs/UKBI2015_DS_B7_Final2.xlsx

	<p>(2015) covering the Anglian, Humber, Northumbria, North West, Severn, South East, South West and Thames river basin districts. The Environment Agency is reviewing and updating current RBMPs and consultation on revised draft RBMPs concluded April 22. Implementation of these plans is purported to enhance nature and the natural water assets of the river basin districts that are the foundation of everyone's wealth, health and wellbeing, and the things people value, including culture and wildlife.</p>	<p>for the draft River Basin Management Plan for Scotland 2021-2027. The draft sets out a range of actions to address significant problems affecting water quality, physical condition, water resources and the migration of wild fish. It focuses on reducing resource use, eliminating waste and restoration of natural capital.</p>	<p>prepared in consultation with a wide range of organisations and individuals. The draft Western Wales and River Dee 2021-2027 RBMPs were published for consultation in December 2020 and now site with Ministers for approval noting that the River Dee is a cross-border Plan. The final plans for the Dee and Western Wales river basin districts is anticipated to be published in July 2022.</p>	<p>(RBMP) as required by the regulations were published for each River Basin District within Northern Ireland. These cover the North Eastern, North Western, Neagh Bann river basin districts. The Plans identified where the water environment is in good or excellent condition and set out objectives for improvement or prevention of deterioration.</p>
<p>Water Quality and Resources</p> <p>Eutrophication of marine waters</p>	<p>The majority of UK waters do not experience significant eutrophication – the eutrophication problems are restricted to a small number of areas in coastal waters, primarily estuaries and embayments with restricted water circulation. In a limited number of areas on the north east and southern coasts of the UK and on the south-west coasts of England and Wales and in Northern Ireland, inputs of nutrients of anthropogenic origin (notably nitrate and phosphate from agriculture and urban waste water sources) have resulted in nutrient enrichment in some small estuaries and bays. In general, changes in nitrogen and phosphorus inputs, concentrations of contaminants, chlorophyll concentrations and oxygen levels show improvements. Where measures have been taken to reduce nutrient inputs, it may take a long time to result in the desired outcome due to time lags between taking measures and change in the large reservoirs of nitrogen that have built up in soils and ground-waters in previous decades. However the existing programmes for assessing the eutrophication status for coastal and marine waters</p>			

	developed under the WFD and the OSPAR Convention have to a large extent already been applied successfully with the UK largely achieving GES in the latest 2018 assessment ¹⁹⁸
Water Quality and Resources Hazardous substances	<p>The UK has largely achieved its aim of GES for contaminants. The updated assessment of achieving GES with respect to descriptor 8 (Defra 2019) indicates that concentrations of hazardous substances in the Celtic Seas and the Greater North Sea and their biological effects are generally meeting agreed target thresholds which means they are at levels that should not cause harm to sea life (89% for contaminant concentrations and 96% for biological effects).</p> <p>Highly persistent legacy chemicals are the cause of the few failures, mainly in coastal waters close to polluted sources. Heavy metals (mercury, cadmium, and lead), polycyclic aromatic hydrocarbons (PAHs), organotins and synthetic substances such as polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDEs) are routinely measured for OSPAR. Measurements focus on marine sediments and on organisms in which these contaminants tend to accumulate or through which they biomagnify up the food chain. Contaminant concentrations have continued to decrease in the majority of areas assessed within the OSPAR area. Although concentrations are generally below levels likely to harm marine species, they mostly have not yet reduced to background levels. Concerns remain in some localised areas with respect to high levels of mercury, lead, and certain PCB compounds and locally increasing concentrations of PAHs and cadmium in open waters¹⁹⁹:</p>
Water Quality and Resources: Bathing Water Quality	<p>The Bathing Water Directive (76/160/EEC) is to protect public health and the environment. The Directive sets a number of microbiological and physico-chemical standards that bathing waters must either comply with ('mandatory' standards) or endeavour to meet ('guideline' standards). The Bathing Water Directive is transposed into law in all of the United Kingdom's devolved administrations and is administered in England by the Department of Environment, Food and Rural Affairs, in Scotland by the Scottish Government, in Wales by Natural Resources Wales and in Northern Ireland by the Department of Agriculture, Environment and Rural Affairs.</p> <p>Water quality at designated bathing water sites in England is assessed by the Environment Agency. From May to September, weekly assessments measure current water quality, and at a number of sites daily pollution risk forecasts are issued. Annual ratings classify each site as excellent, good, sufficient or poor based on measurements taken over a period of up to four years.</p>

¹⁹⁸ <https://moat.cefas.co.uk/pressures-from-human-activities/eutrophication/>

¹⁹⁹ <https://oap.ospar.org/en/ospar-assessments/intermediate-assessment-2017/key-messages-and-highlights/contaminant-concentrations-are-decreasing-concerns-remain/>

	<p>As of 2019, in England, the quality status of bathing water areas assessed under the Bathing Waters Directive were²⁰⁰:</p> <ul style="list-style-type: none"> • Excellent – 300 • Good – 92 • Sufficient – 21 • Poor – 8 • Closed - 1 	<p>As of 2019 there were 86 designated bathing waters in Scotland. The quality status of bathing water areas assessed under the Bathing Waters Directive were²⁰¹:</p> <ul style="list-style-type: none"> • Excellent – 29 (34%) • Good – 31 (35%) • Sufficient – 20 (23%) • Poor – 6 (8%) 	<p>In Wales, 105 designated bathing waters were sampled and classified during the 2019 bathing season. The quality status of bathing water areas assessed under the Bathing Waters Directive were²⁰²:</p> <ul style="list-style-type: none"> • Excellent – 83 • Good – 17 • Sufficient – 5 <p>All of the designated bathing waters met the minimum water quality standards and there were no non-compliant bathing waters during the 2019 season.</p>	<p>In Northern Ireland, all 26 monitored coastal bathing waters were classified overall as reaching minimum standards during the 2019 annual classification. The quality status of bathing water areas assessed under the Bathing Waters Directive were²⁰³:</p> <ul style="list-style-type: none"> • Excellent – 14 (53.85%) • Good – 9 (34.62%) • Sufficient – 3 (11.54%)
<p>Supporting Trend Data:</p> <p>2015 was the first year of implementing the new classification system for bathing water quality. The results of these are not directly comparable to years prior to this. In general, there has been improvements in bathing water quality since recording began in 1988.</p>				

²⁰⁰ Environment Agency, Bathing Water Data. Available: <http://environment.data.gov.uk/bwq/profiles/data.html?country=England>

²⁰¹ Scottish Environment Protection Agency (2019) *Season 2019: Classifications*. Available: <https://www2.sepa.org.uk/bathingwaters/Classifications.aspx>

²⁰² Natural Resources Wales (2021) *Wales bathing water quality report 2019*. Available: <https://naturalresources.wales/evidence-and-data/research-and-reports/water-reports/2019-wales-bathing-water-quality-report/?lang=en>

²⁰³ Department of Agriculture, Environment and Rural Affairs (2020) *Better beaches report*. Available: <https://www.daera-ni.gov.uk/articles/bathing-water-quality>

<p>Flood Risk and Coastal Change:</p> <p>Location of Fluvial and Tidal Floodplains</p>	<p>In England and Wales, the flood risk (river and tidal) is categorised into three zones²⁰⁴ for planning purposes (noting that the NPPF further subdivides flood zone 3 into 3a and Functional Floodplain 3b (land where water has to flow or be stored in times of flood)):</p> <ul style="list-style-type: none"> • Flood Zone 1 – Land unlikely to be affected by flooding, with a less than 0.1% (less than 1 in 1000) chance of flooding each year. • Flood Zone 2 – Land likely to be affected by a major flood, with up to a 0.1% (1 in 1000) chance of occurring each year. • Flood Zone 3 – Land likely to be affected by flooding from the sea by a flood that has a 0.5% (1 in 200) or greater chance of happening each year, or from a river by a flood that has a 1 per cent (1 in 100) or greater chance of happening each year. <p>The risk of surface water flooding also needs to be considered:</p> <ul style="list-style-type: none"> • Very low risk area (less than 0.1% (1:1000)) chance of flooding. • Low risk area (0.1% to 1% (1:1000 – 1:100)) chance of flooding. • Medium risk area (1% to 3.3% (1:100 – 1:30)) chance of flooding. • High risk area (3.3% (1:30)) or greater chance of flooding. <p>In Scotland, the flood risk (river, tidal and surface water) is categorised into three areas²⁰⁵:</p> <ul style="list-style-type: none"> • Little or no risk area (less than 0.1% (1:1000)) chance of flooding. • Low to medium risk area (0.1% to 0.5% (1:1000 – 1:200)) chance of flooding. • Medium to high risk area (0.5% (1:200)) or greater chance of flooding. <p>The Northern Ireland Flood Risk Assessment Plan (NIFRA) 2018, identified a total of 45 flood risk areas. Out of these, 12 have been identified as Areas of Potential Significant Flood Risk (APSFR) and a further 9 determined Transitional Areas of Potential Significant Flood Risk (TAPSFR)²⁰⁶.</p> <p>Estimates of flood risk from different sources across the UK vary, but it is known that the level of risk is substantial – for example in Wales, over 160,000 properties are at risk of flooding from rivers and sea, with approximately 130,000 properties in Wales at risk of surface water flooding (in addition to potentially other flood risks)²⁰⁷. Scotland has an estimated 108,000</p>
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²⁰⁴ Environment Agency (2013) *Flood Map for Planning*. Available: <http://apps.environment-agency.gov.uk/wiyby/37837.aspx>

²⁰⁵ Scottish Government (2020) *Scottish Planning Policy, A Natural, Resilient Place*. Available: <https://www.gov.scot/publications/scottish-planning-policy/pages/7/>

²⁰⁶ Department for Infrastructure (2018) *Northern Ireland Flood Risk Assessment (NIFRA) 2018*. Available: <https://www.infrastructure-ni.gov.uk/sites/default/files/publications/infrastructure/northern-ireland-flood-risk-assessment-report-2018-updated-may2019.pdf>

²⁰⁷ Welsh Government (2019) *Properties at Risk of Flooding in Wales*. Available: <https://statswales.gov.wales/Catalogue/Environment-and-Countryside/Flooding>

properties at risk of flooding²⁰⁸, England has approximately 5.2million at risk²⁰⁹, while in Northern Ireland, the Preliminary Flood Risk Assessment (PFRA) 2011 estimated that 46,000 or 5% of the 830,000 properties in Northern Ireland are located within the undefended 1 in 100 year fluvial floodplain or 1 in 200 year coastal floodplain²¹⁰.

Shoreline Management Plans have been developed across England and Wales by Coastal Groups made up of members from local councils and the Environment Agency. The purpose of these plans is to identify the most sustainable approach to managing the flood and coastal erosion risks to the coastline in the:

- Short term (0 to 20 years)
- Medium term (20 to 50 years)
- Long term (50 to 100 years)

A total of 22 plans have been developed for England and Wales as follows²¹¹:

- SMP 1 – Scottish Border to River Tyne
- SMP 2 – The Tyne to Flamborough Head
- SMP 3 – Flamborough Head to Gibraltar Point
- SMP 4 – Gibraltar Point to Huntstanton
- SMP 5 – Hunstanton to Kelling hard
- SMP 6 – Kelling Hard to Lowestoft
- SMP 7 – Lowestoft to Felixstowe
- SMP 8 – Essex and South Suffolk
- SMP 9 – River Medway and Swale Estuary
- SMP 10 – Isle of Grain to South Foreland
- SMP 11 – South Foreland to Beachy Head
- SMP 12 – Beachy Head to Selsey Bill
- SMP 13 – Selsey Bill to Hurst Spit
- SMP 14 – Isle of Wight

²⁰⁸ Scottish Government (2015) *Mapping flood disadvantage in Scotland 2015: report*. Available: [https://www.gov.scot/publications/mapping-flood-disadvantage-scotland-2015-main-report/pages/10/#:~:text=The%20investigation%20into%20the%20flood,change\)%2C%20with%20a%20minor%20number](https://www.gov.scot/publications/mapping-flood-disadvantage-scotland-2015-main-report/pages/10/#:~:text=The%20investigation%20into%20the%20flood,change)%2C%20with%20a%20minor%20number)

²⁰⁹ Environment Agency (2009) *Flooding in England: A National Assessment of Flood Risk*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/292928/geho0609bqds-e-e.pdf

²¹⁰ Rivers Agency (2011) *Preliminary Flood Risk Assessment and Methodology for the Identification of Significant Flood Risk Areas*. Available: <https://www.infrastructure-ni.gov.uk/sites/default/files/publications/dard/final-pfra-report.pdf>

²¹¹ Environment Agency (2009) *Shoreline Management Plans (SMPs)*. Available: <https://www.gov.uk/government/publications/shoreline-management-plans-smps>

	<ul style="list-style-type: none">• SMP 15 – Hurst Spit to Durlston Head• SMP 16 – Durlston Head to Rame Head• SMP 17 – Rame Head to Hartland Point• SMP 18 – Hartland Point to Anchor Head• SMP 19 – Anchor Head to Lavernock Point• SMP 20 – Lavernock Head to Saint Ann’s Head• SMP 21 – St. Ann’s Head to Great Ormes Head• SMP 22 – Great Ormes Head to Scotland <p>The Shoreline Management Plans propose four different management policies:</p> <ul style="list-style-type: none">• No active intervention• Hold the (existing defence) line• Managed realignment• Advance the line <p>There is not the same comprehensive approach to Shoreline Management in Scotland, with only a small number (four) of local authorities publishing Shoreline Management Plans, though there is a growing recognition of the need for a more joined up approach to this issue, particularly in light of a changing climate and recent work has informed this process²¹². Northern Ireland also does not have a strategic approach to shoreline management²¹³.</p>		
The National Flood and Coastal Erosion Risk Management Strategy for England identifies that approximately 5.2 million, or one in six residential properties are located in areas at risk of flooding from rivers, the sea and surface	Scotland has an estimated 108,000 properties, over 4% of residential properties, at risk of any type of flooding, with just below 3.6% of all data zones classified as having an extremely high or acute vulnerability to flooding, affecting an estimated	Flood zones 2 and 3 are located across the whole of Wales. The largest and most extensive of these areas exist in lowland and estuarine regions, such as the River Dee and Severn estuary. Mid Wales and the highland regions, such as Snowdonia	There are Significant Flood Risk Areas throughout Northern Ireland, for which detailed mapping is available. The largest of these are located around centres of population, such as Belfast in the east and Londonderry in the west.

²¹² Dynamic Coasts (2017) National Coastal Change Assessment. Available: <http://www.dynamiccoast.com/outputs.html>

²¹³ Northern Ireland Assembly (2015) *Shoreline management planning in Northern Ireland*. Available: http://www.niassembly.gov.uk/globalassets/documents/raise/knowledge_exchange/briefing_papers/series4/2015-04-15-kess-shoreline-management-planning-in-northern-ireland1.pdf

	<p>water²¹⁴. Flood Zones 2 and 3 and located across the whole of England associated with river and coastal areas. Lowland areas are of particular risk as a consequence of floodplains being associated with the lower reaches of rivers²¹⁵.</p> <p>100,000 people²¹⁶, Over 60,000 people may be extremely or acutely disadvantaged in relation to river (fluvial) flooding, over 28,000 people may be extremely or acutely disadvantaged in relation to coastal flooding, and 14,000 people in regard to surface water flooding.</p> <p>and the Brecon Beacons, have less risk of flooding²¹⁷.</p> <p>NB: Other areas of Northern Ireland are likely to be at risk of flooding, although these are not as extensively mapped/assessed due to Significant Flood Risk Areas being allocated on the basis of population density²¹⁸.</p>
	<p>Supporting Trend Data:</p> <p>As a consequence of climate change (which could lead to increased rainfall, river flows, and higher coastal storm surges), and development pressures, it is likely that flood risk will increase in the future, with potentially the most significant changes likely to happen in the latter half of the century. In England it is estimated that over the next 50 years, without investment in flood defences, the number of properties experiencing a 1% annual likelihood of flooding from rivers and sea would increase from 748,000 to 1.29 million. Similar increase are likely to occur within Scotland, Wales and Northern Ireland²¹⁹.</p>
Marine Spatial Plans	<p>Marine planning in the UK has been taking place across different timescales. The first marine plans to be adopted in the UK were the East Inshore and Offshore Marine Plans in 2014 and the Scottish National Marine Plan in 2015, followed by the South Inshore and Offshore Marine Plans in 2018 and the Welsh National Marine Plan (WNMP) in 2019. The Marine Management Organisation (MMO) and Department of Agriculture, Environment and Rural Affairs (DAERA) continue to develop the remaining plans for areas of English waters and the waters of Northern Ireland respectively. In England, all Marine Plans have</p>

²¹⁴ Environment Agency (2009) *Flooding in England: A National Assessment of Flood Risk*. Available:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/292928/geho0609bqds-e-e.pdf

²¹⁵ Environment Agency (2017) *Flood Map for Planning (Rivers and Sea)*. Available: <http://apps.environment-agency.gov.uk/wiyby/37837.aspx>

²¹⁶ Scottish Government (2015) *Mapping flood disadvantage in Scotland 2015: report*. Available: [https://www.gov.scot/publications/mapping-flood-disadvantage-scotland-2015-main-report/pages/10/#:~:text=The%20investigation%20into%20the%20flood,change\)%2C%20with%20a%20minor%20number](https://www.gov.scot/publications/mapping-flood-disadvantage-scotland-2015-main-report/pages/10/#:~:text=The%20investigation%20into%20the%20flood,change)%2C%20with%20a%20minor%20number)

²¹⁷ Natural Resources Wales (2017) *Flood risk map*. Available: <https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en>

²¹⁸ Department for Infrastructure (2020) *Flood Maps NI*. Available: <https://www.infrastructure-ni.gov.uk/topics/rivers-and-flooding/flood-maps-ni>

²¹⁹ Environment Agency (2014) *Flood and coastal erosion risk management. Long-term investment scenarios (LTISA) 2014*. Available: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/381939/FCRM_Long_term_investment_scenarios.pdf

	<p>been adopted. The consultation on the Marine Plan for Northern Ireland took place in 2018, but a final plan is yet to be adopted. The remaining plans, like those already adopted, are consistent with the Marine Policy Statement, and have taken a similar approach, presentation (comprising a vision, objectives and general and sectoral policies) and in the approach to policy wording. Marine plans in the UK have, to date, been written at a strategic level which largely consolidates and clarifies existing legal and policy arrangements, albeit with a regional focus, and in most instances do not attempt to be spatially explicit, for example by indicating defined zones for development or where development would be precluded. The plans rather identify potential resource and constraint (including through mapping), with policies that seek to balance environment, economic and social considerations in decision making and consent application. This includes the promotion of certain activities such as offshore wind, or the safeguarding of strategic resources. As these are the first iteration of marine plans, subsequent revisions may be expected to be more explicit²²⁰.</p>
Resources and Waste	<p>The UK generated 221.0 million tonnes of total waste in 2016, and it is estimated that 41.1 million tonnes of this was commercial and industrial (C&I) waste²²¹.</p> <p>In 2018, 26,411,000 tonnes of Waste from Households (WfH) were generated in the UK with an overall recycling rate of 45%. In England, the recycling rate was 44.7%, in Northern Ireland it was 47.7%, in Wales it was 54.1% and in Scotland it was 42.8%. Around 14,644,000 tonnes of the UK's municipal waste went to landfill in 2018²²².</p> <p>Total UK commercial and industrial waste, comprising inert, non-hazardous arising which result from trade or businesses, was 43.9 million tonnes in 2018. Around 85% of this total was generated in England. This was split between the commercial and industrial sectors by 30.8 and 13.1 million tonnes respectively²²³.</p> <p>Construction, demolition and excavation (CD&E; including dredging) generated around three fifths (62%) of total UK waste in 2016. 66.2 million tonnes of non-hazardous construction and demolition waste was produced in the UK in 2018, 91% (60.2 million tonnes) of which was recovered. This recovery rate is broadly similar over the period 2010 – 2014. The Waste</p>

²²⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/974180/OESEA4_Scoping_Document.pdf

²²¹ Department for Environment, Food and Rural Affairs (2020) UK Statistics on Waste. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918270/UK_Statistics_on_Waste_statistical_notice_March_2020_accessible_FINAL_updated_size_12.pdf

²²² Department for Environment, Food and Rural Affairs (2020) UK Statistics on Waste. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918270/UK_Statistics_on_Waste_statistical_notice_March_2020_accessible_FINAL_updated_size_12.pdf

²²³ Department for Environment, Food and Rural Affairs (2022) UK Statistics on Waste. Available: <https://www.gov.uk/government/statistics/uk-waste-data/uk-statistics-on-waste>

	Framework Directive targets a 70% recovery rate for non-hazardous construction and demolition waste by 2020, which the UK is expected to achieve at these given rates ²²⁴ .
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²²⁴ Department for Environment, Food and Rural Affairs (2020) UK Statistics on Waste. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/918270/UK_Statistics_on_Waste_statistical_notice_March_2020_accessible_FINAL_updated_size_12.pdf

Appendix E. Key recommendations made through the AoS process

A key element of the AoS process is to make recommendations to plan makers in respect of how the Plan can be strengthened in sustainability terms. It is noted that an initial assessment was undertaken on a draft EN-1 document dated April 2021 and that this resulted in suggestions of additional mitigation (in the form of recommendations, to be considered in the drafting of EN-1 for public consultation. The following provides detail on those key recommendations made. These have all been incorporated to the NPS.

Key Recommendations made through AoS process	
EN-1 Overarching	
AoS Objective 1: Consistent with the national target of reducing carbon emissions to Net Zero by 2050	<p>It is recommended that EN-1 acknowledges the need for all carbon emissions associated with NSIPs to be accounted for and that a new section dedicate solely to greenhouse Gas emissions is introduced in Chapter 5. This new section should require new NSIPs planning applications to be accompanied by a Carbon Statement which will demonstrate:</p> <ul style="list-style-type: none"> • A whole life carbon assessment driving down construction, operational and decommissioning carbon impacts • Measurement of embodied carbon impact from the products and construction stage • Prioritisation of reduction in energy demand and consumption during operation over all other measures • Calculation of in-use energy consumption and associated carbon emissions • Calculation of renewable or abated energy generated during lifetime • Calculation of carbon displacement ie. carbon savings by end user due to the use of particular low or zero carbon technology • Any remaining residual carbon emissions offset/removed using a recognised framework
AoS Objective 3: Enhance biodiversity, promoting net gain, and supporting ecosystem resilience and functionality	<p>Recommendations for further mitigation of adverse effects are outlined below:</p> <ul style="list-style-type: none"> • EN-1 could recognise that, alongside protected areas and Nature Recover Network, the wider green infrastructure network does provide biodiversity benefits and as such should be protected and enhanced as part of development proposals. • EN-1 could suggest that applicants produce and implement a Biodiversity Management Strategy as part of their development proposals. • EN-1 could require that proposals include biodiversity awareness training for employees and contractors to avoid adverse impacts on biodiversity during the construction and operation stages. • EN-1 could expand on the reference to following best practice for avoiding disturbance and damage to species and habitats. In particular, it could be suggested that the timing of construction is restricted to avoid or limit disturbance to birds during breeding season. • Whilst NSIP projects are to be exempt from providing the 10% biodiversity net gain mandated by the Environment Bill, EN-1 could set a recommended target level of biodiversity net gain.

	<ul style="list-style-type: none"> EN-1 could require nature inclusive design in the marine environment. Similarly, mitigation measures should take into account existing habitats and should generally seek to enhance, rather than replace, these.
AoS Objective 6: Protect and enhance the character and quality of the landscapes and townscapes, protect and enhance visual amenity	Recommendation that EN-1 expands in Chapter 5 upon how landscape can be enhanced, including through appropriate landscape management plans that could perhaps include the use / reflection of local vernacular architecture for discrete elements to the scheme, as well as contributing to landscape through planting of woodland etc. This will also help to enhance environmental assets where they contribute to landscape and townscape quality. It is also suggested that the text is clarified to note that consideration of noise on sensitive receptors will also be made (along with that noted for light on local amenity and nature conservation). Finally it is recommended that the text is clarified to replace the term 'seascape' with 'waterscape' as this encompasses inland waterways and estuaries as well as coastal areas.
AoS Objective 7: Protect and enhance the water environment	<p>Recommendations for further mitigation of adverse effects are outlined below:</p> <ul style="list-style-type: none"> EN-1 could encourage applicants to manage surface water during construction by treating surface water runoff from exposed topsoil prior to discharging. It is also recommended that EN-1 notes the need to limit the discharge of suspended solids e.g. from car parks or other areas of hard standing, during operation. EN-1 could encourage applicants to use protective measures to control the risk of pollution to groundwater beyond those outlined in Water Resource Management Plans – this could include for example the use of protective barriers. EN-1 could encourage applicant not only to note any relevant abstraction rates, proposed new abstraction rates and proposed changes to abstraction rates, which should include any impact to mains supplies and reference to Catchment Abstraction Management Strategies, but also demonstrate how their proposals minimise the use of water resources and water consumption in the first place.
AoS Objective 8: Protect and enhance air quality	EN-1 makes no mention of green infrastructure provision or enhancement as an opportunity to improve air quality or mitigate impacts, which is one of the guide questions. Green infrastructure is included in the NPPF (para 181), and as such it is recommended that provision of green infrastructure due to its role in improving air quality, in particular urban air quality, is also included in the air quality section of EN-1.
AoS Objective 9: Protect soil resources and avoid land contamination	<p>Recommended that EN-1 could suggest that proposals should include development and implementation of a Soil Management Plan.</p> <p>Although opportunities for use of previously developed land may be limited, it is recommended that EN-1 could suggest that applicants consider opportunities for remediation where possible. This could also include for consideration in the decommissioning/restoration stages of energy generating infrastructure. Overall, it is also recommended that EN-1 could place greater emphasis on the minimisation of land contamination within Chapter 5.</p>
AoS Objective 10: Protect,	To further minimise adverse impacts on geodiversity it is recommended that EN-1 could suggest in relation to Biodiversity and Geological Conservation

enhance and promote geodiversity	<p>(Chapter 5), that applicants produce and implement a Geodiversity Management Strategy as part of relevant development proposals.</p> <p>In addition, EN-1 could suggest that applicants preserve and enhance access to geological interest features for relevant development proposals.</p>
AoS Objective 11: Improve health and well-being and safety for all citizens and reduce inequalities in health	<p>Recommended that further text is provided within EN-1 that consideration should be made of the distribution of effects across the population where appropriate, with a particular focus on 'vulnerable groups' within society i.e. those groups within society which may be differentially impacted by a development compared to wider society as a whole. Such vulnerable groups could include (but not be limited to) the young, the elderly, families with children, those with disabilities, those with existing poor health conditions, those on low income or living in deprivation and so on.</p> <p>Provision of such text within EN-1 to require the undertaking of consideration of the distribution of health impacts, with a particular focus on vulnerable groups, in respect of any proposed energy infrastructure development, will provide clarification and reassurance that health inequalities can be addressed to ensure a beneficial outcome.</p>
AoS Objective 12: Promote sustainable transport and minimise detrimental impacts on strategic transport network and disruption to basic services and infrastructure	<p>It is recommended that the text of EN-1 notes the requirement for consideration of disruption to services and infrastructure</p>
AoS Objective 13: To promote a strong economy with opportunities for local people	<p>It is a recommendation that EN-1 outlines the requirement for an accommodation strategy to be developed for construction and decommissioning phases, that would include for the need to provide temporary accommodation for construction workers if judged to be required. This accommodation strategy could be expanded to include issues such as access to local health, community and educational services should this be deemed necessary (following its exploration through the ES). It is also recommended that note is made on EN-1 to encourage developers to ensure local suppliers are incorporated into the supply chain and expand on the assumption that apprenticeships and skills courses will be enacted through the noted Employment and Skills Plan to specifically note the need for provision of education and training programmes to be enacted. Furthermore, encouragement should be given through EN-1 for developers to proactively engage with local schools and colleges to further opportunities for 'upskilling'.</p>
AoS Objective 14: Promote sustainable use of resources	<p>It is recommended that greater emphasis is placed within EN-1 to encourage developers to source materials in the first instance from recycled or reused sources, with virgin material only used when no practical alternative is available. Materials used should also be low carbon where possible, with sustainable</p>

and natural assets	sources and local suppliers preferred. Emphasis should also be placed on ensuring that construction best practices are used to ensure that material is reused or recycled onsite where possible. Construction best practices should also be emphasised in relation to storing materials in an adequate and protected place on site as damages (including through deliberate vandalism) is a major source of waste arising through construction. Note should also be made in EN-1 of the benefits of using Building Information Management tools (or similar) to record the materials used in construction as this can help to reduce waste in future decommissioning of facilities, by identifying materials that can be recycled or reused.
EN-2 Natural Gas Electricity Generating Infrastructure	
AoS Objective 1: Reducing Carbon to Net Zero	It is recommended that EN-2 details, in addition to the recommendations set out in AoS-1 for reduction and emissions during construction, operation and decommissioning, a clear requirement for developers that mitigation measures to balance or offset the construction and decommissioning emissions from unabated generating power stations need to accompany the planning applications. Measures could include technological processes or nature-based solutions.
EN-3 Renewable Energy Infrastructure	
AoS Objective 1: Reducing Carbon to Net Zero	It is recommended that EN-3 explains the reasons for the omissions, sets out that energy-from waste has a potentially significant role in supporting delivery towards the UK's net zero target when combined with CCS (as for biomass) and refers to initiatives already underway to address emissions from waste combustion technology. One such initiative is that Government is considering the removal of the 300MW threshold from current CCR readiness as per the footnote in EN-2 which states 'The Energy White Paper, published in December 2020, committed to consult on proposals to update the Carbon Capture Readiness requirements to reflect technological advances, such as conversion to low carbon hydrogen and apply them more broadly, by removing the 300MW threshold. That separate consultation process, on new proposals for Decarbonisation Readiness, is running in parallel to the review of the national policy statements. If that consultation leads to changes in the relevant legal or policy framework then those new requirements will apply and this NPS will be updated to reflect any revised requirements ahead of designation.'
EN-4 Gas Supply Infrastructure and Oil and Gas Pipelines Infrastructure	
AoS Objective 1: Reducing Carbon to Net Zero	It is recommended that EN-4 clearly considers the effects of fugitive and vented methane emissions from underground natural gas storage facilities. In light of the above assessment, it is recommended that EN-4 details a clear requirement for developers that mitigation measures are needed to reduce and/or eliminate the emissions of methane from leaks in their infrastructure and from operation.
EN-5 Electricity Networks Infrastructure	
AoS Objective 1: Reducing	It is recommended that EN-5 clearly considers the impacts of fugitive SF6 emissions into the atmosphere and details a clear requirement for developers that mitigation measures are needed to reduce and/or eliminate such emissions from leaks in their infrastructure. Measures could include use of SF6 detection

Carbon to Net Zero	cameras, monitoring of SF6 emissions and report and record leaks, investment into sourcing alternatives and using alternatives as they become available.
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Appendix F. Baseline Maps

Note that these maps are provided in a separate document - Appendices Volume II

This publication is available from: www.gov.uk/government/publications/national-policy-statements-for-energy-appraisal-of-sustainability

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