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
CPS	Carbon Price Support
DCO	Development Consent Order
DECC	Department for Energy and Climate Change

Abbreviation	Term
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

Abbreviation	Term
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

Abbreviation	Term
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 Hexaflouride
SLVIA	Seascape and Landscape Visual Impact Assessment
SNCI	Site Nature Conservation Interest
SO2	Sulphur Dioxide
SPA	Special Protection Area

Abbreviation	Term
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 CO2 produced in the combustion of fossil fuels is captured and transported to a storage location and isolated from the atmosphere. Capture of CO2 can be applied to large emission sources like power plants used for electricity generation, production of hydrogen from methane reforming and industrial processes. The CO2 is then compressed and transported for long term storage in geological formations or for use in industrial processes.
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 (CO2) 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 carbon. Some will rely on carbon capture, or being offset against negative emissions, to deliver a net zero outcome. 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. Hydrogen electrolysers 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.
Long-duration Energy Storage	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. 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. 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.
Bioenergy with CCUS	The coupling of bioenergy with carbon capture and storage to capture the CO2 produced during combustion.

Term	Explanation
	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.
Nuclear	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. 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
Unabated gas	Gas power stations that have not been fitted with carbon capture and storage technology to address carbon emissions

Appendix B. Response to Scoping Consultation

Table B-1 - Overview of responses to AoS Scoping document

Consultee	Nature of response	Implications for AoS
CADW	Cadw have identified the following additional documents/ conventions should be included in the above. They are: **International** • 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 **UK** • Protection of Military Remains Act 1986 • National Heritage Act 2002 • Marine and Coastal Access Act 2009 **Wales** • Historic Environment Act (Wales) 2016 • Future Wales The National Plan 2040	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
Dept. Agriculture Environment and Rural Affairs (DAERA) – Northern Ireland Environment Agency	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 ton Northern Ireland, in combination with any identified measures envisaged to prevent, reduce and as fully possible offset any significant adverse effects on the environment. It is noted that the Energy NPS does not apply in Northern Ireland. 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, 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	Noted for information – the NPS does not apply to Northern Ireland

Consultee	Nature of response	Implications for AoS
	waters, migratory species and those that may be selection features of designated sites e.g. overwintering birds within SPAs. Comments from Drinking Water Inspectorate are noted but relate to if NPS was to be implemented in Northern Ireland. 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;” Note is made of the potential for climate change to lead to coastal process changes. 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.	
Environment Agency	**Range of additional Plans and Programmes suggested for inclusion / consideration.** **Range of additional aspects suggested for inclusion to baseline data:** Recommendation that coastal change is identified as a category in Table 5-1 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). 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, 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,	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	Nature of response	Implications for AoS
	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. 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). 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. We recommend that 'water' is subcategorised into water quality, water resources, and flood risk. 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. 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. 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.	

Consultee	Nature of response	Implications for AoS
	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.	
	No. of recommendations on AoS Objectives and Guide Questions: 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”. 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. 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” 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. 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” 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’. 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. 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’. 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.	Recommendations reviewed and AoS Framework updated as considered appropriate

Consultee	Nature of response	Implications for AoS
	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.' 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. 3.3.4 In line with the National FCERM Strategy, there should be something on ensuring infrastructure provider investments are resilient to climate change. 3.3.5 – include an objective to reduce ammonia emissions. 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? 3.3.10 – add an addition bullet to read "Apply the waste hierarchy". 3.5. In line with the National FCERM Strategy 'Creating a nation of climate champions' should be added to the list of social objectives. 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. 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. 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 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	

Consultee	Nature of response	Implications for AoS
	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'. Table 6-1 - Maximise adaptation and resilience to climate change – guide questions • 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"	
	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: • 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 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. 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? Energy NPS should look at the widest perspective of energy and developments should be assessed in the context of the whole energy supply chain, from cradle to grave, and in the long term. Also they should be assessed in combination with other pressures. This is the only way to fully assess sustainability. Where energy infrastructure involves the long term storage of waste	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	Nature of response	Implications for AoS
	(nuclear, carbon capture), the carbon and environmental costs of this should be assessed as integral to the energy infrastructure.	
Green Alliance	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. 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.' 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: (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 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. 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.	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

Consultee	Nature of response	Implications for AoS
Historic England	We have some general comments, and some points of detail: **General:** Overall, we welcome this Scoping Report in relation to the historic environment. However, we would like to see: • 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 • 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. **Detail:** Although we recognise that the list is not exhaustive, we would like the following to be included and reviewed under International PPL: • The Valetta Convention 1992 (Convention for the Protection of Archaeological Heritage) • The Florence Convention 2000 (European Landscape Convention) Under National PPL, we would like to see the following important pieces of legislation included and reviewed:	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. References have been added to nationally important archaeological sites, historic landscapes, Areas of Archaeological Importance and the Heritage at Risk register.

Consultee	Nature of response	Implications for AoS
	• 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 Under England PPL, we would like the following included: • The Government's Heritage Statement 2017 • Marine Plans for England 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.	
JNCC	JNCC advised that they would not be making a response to the consultation	Noted
Welsh Government	The Welsh Government noted a range of Welsh Government publications for consideration: • 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) Colleagues also flagged the need to reference and consider the WBFG Act (useful guidance here across all this work) • Wales National Marine Plan • Prosperity for All: a Low Carbon Wales • Policy Statement on Local Ownership of Energy Developments 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	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	Nature of response	Implications for AoS
	to make reference to the Wellbeing of Future Generations Act and the Environment (Wales) Act in relation to Wales. Further note was made of additional feedback. This included additional sources of information and noted: • 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: o "Protect and improve the quality of ground and surface water 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	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. SEPA also noted a range of additional Plans and Policies relevant to Scotland and updated the list provided in the Scoping Report as follows: • 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)	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	Nature of response	Implications for AoS
	• 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 • 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	

Consultee	Nature of response	Implications for AoS
	• 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 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, deliveries bodies and other organisations such as The Wildlife Trusts and RSPB. 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. • 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 trigging 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	Noted – see HRA Report for details of how these comments were considered / addressed

Consultee	Nature of response	Implications for AoS
	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 EN-3 (renewable energy) and EN-5 (electricity network infrastructure) it feels like a missed opportunity not to incorporate the work already being undertaken. • 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	

Consultee	Nature of response	Implications for AoS
	'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-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. • 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 responses 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		

Consultee	Nature of Response	Implication for AoS
NRW	**Wave and Tidal Development** 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.	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	**Tidal Lagoons** 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 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. 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. 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.	Tidal lagoons have not been assessed generically in AoS-1 and tidal stream energy non-generic effects have been specifically considered in AoS-3
NRW	**Restoration of marine and coastal ecosystems** 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	Offshore wind generic effects have been assessed in AoS-1 and non-generic effects have been

Consultee	Nature of Response	Implication for AoS
	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). 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. 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	specifically assessed as part of AoS-3
NRW response to questions – 1. Consultees are invited to highlight additional initiatives which they consider are relevant to the draft plan/programme		
NRW	**Tidal Lagoon Challenge** 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.	Comment acknowledged.
NRW	**MPA network completion project** 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. 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:	Comment noted – potential for new MCZs made within Appendix D under 'Biodiversity and Ecosystem: MCZ' section

Consultee	Nature of Response	Implication for AoS
	• 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.	
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

Consultee	Nature of Response	Implication for AoS
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 *(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)*		
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 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. 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. Highlighting this fact would demonstrate the value of the OESEA process to Wales.	Comment noted - Policy and text updated accordingly
NRW	**NRW Technical Guidanc**e - 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: • 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	Comment noted – Technical Guidance documents added to AoS Report

Consultee	Nature of Response	Implication for AoS
	• Evidence reports on seascape and visual sensitivity to offshore wind farms - 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 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: ▪ 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). We are also aware of guidance produced by NatureScot on 'Coastal Character Assessment' but do not see it listed in the Scottish Section. • 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. 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	**Other relevant sources of information** The following are key sources that do not appear to have been referenced in the SR. • 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.	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

Consultee	Nature of Response	Implication for AoS
	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: *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*	
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	**Tidal Lagoons and Eutrophication** 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 significantly, alongside other effects on fish and phytoplankton that could also prevent achievement of GES or cause deterioration in status.	Comment noted.
NRW	**Gaps in evidence about impacts of tidal lagoon and tidal stream technologies** 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). 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.	Comment noted.

Consultee	Nature of Response	Implication for AoS
	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: • 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. 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. • 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. 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. • 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 access 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	

Consultee	Nature of Response	Implication for AoS
	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	**Poor Knowledge of the status of mammals** Note that the SCANS III survey has been completed (in 2016) and relevant SR the text needs updating	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** 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.	Comment noted.
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	Comment noted.

Consultee	Nature of Response	Implication for AoS
	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.	
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: • 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	**Invasive & non-native species (INNS)** 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.	Comment noted.

Consultee	Nature of Response	Implication for AoS
	See also our comments relating to INNS and SoNaRR in response to question 2.	
NRW	**In-combination and cumulative effects** 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. It may be helpful to review any outputs from the UK Cumulative Effects Framework managed by the Centre for Ecology & Hydrology.	In-combination and cumulative effects assessment undertaken in the AoS Report.
NRW	**Assessment Envelopes** 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. 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.	Comment noted but the SEA is non-locational as a result of the NPSs being non-locational too.
NRW	**Carbon Sinks** 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.	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-	Comment noted.

Consultee	Nature of Response	Implication for AoS
	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.	
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	Comment noted.

Consultee	Nature of Response	Implication for AoS
	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.	
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	• 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) • NRW Area Statements should also be considered	Comments noted – plans and policies added or updated within AoS-1.

Consultee	Nature of Response	Implication for AoS
	• 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.	

Consultee	Nature of Response	Implication for AoS
NRW	**Appendix A, Table 2.** • 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	Regional Plans and policies moved to table 5 'Regional Policies' within App C as required. Duplicate removed - Single reference to Act made. Reference updated to 2021. Policy updated. Final Plan referenced.
NRW	**Annex B** *Soils, Geology, and Land Use:* *Contaminated Land* • 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. *Water Quality and Resources:* *Water Framework Directive (WFD)* • Reference is missing to groundwater body classification status. This is available from the relevant river basin management plans *Biodiversity and the Natural Environment*	Text included within Appendix D – 'Soils, Geology, and Land Use: Contaminated Land' section Groundwater classifications for England, Scotland, Wales and NI provided within the Baseline (Appendix D)

Consultee	Nature of Response	Implication for AoS
	• Section 3.3.1 – would benefit from a reference to supporting ecosystem resilience upfront (as per the Environment (Wales) Act 2016) *Adapting to a Changing Climate and Flooding* • 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. 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	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: • 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 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.	Baseline data updated to include required information within Appendix D – Biodiversity and Ecosytems: SSSI, ASSIs Soils, Geology and Land use – Geoparks Note made that contaminated land is best identified on a local basis and that the LAs maintain the Public Registers. Reference included in App D – Biodiversity and Ecosystems: MCZs
NRW	**Section 4 Table 4.1** 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. 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	Comment noted – addressed within key issues of AoS.

Consultee	Nature of Response	Implication for AoS
	information and SMPs are referenced in Appendix C. We recommend to include these in the main document.	Details of SMPs provided within Baseline
	Annex C 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 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. 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 "*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*" 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.	Comment noted. Link to website provided within report. Comments noted.
3: Do you consider that the range of sustainability problems and issues covered is appropriate?		
NRW	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: • 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 Therefore the AoS should consider the following principles when considering Welsh legislation:	These are considerations in the AoS Report where applicable.

Consultee	Nature of Response	Implication for AoS
	• Deliver demonstrable benefit for the environment and people – should enhance biodiversity, in so doing promote the resilience of ecosystems and contribute to sustainable development within Wales. • Consider the appropriate scale –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). • Consider multiple benefits – 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. • Use a collaborative approach – should work with others to gain a shared understanding of natural capital assets, resources and the benefits provided. • Take account of all relevant evidence – You should consider all relevant social, cultural, economic and environmental evidence, clearly showing assumptions and areas of bias. 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.	
4: Are there any changes you consider should be made to the proposed AoS objectives and guide questions?		
NRW	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. 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. 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. 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	Plans and policies updated accordingly. 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.

Consultee	Nature of Response	Implication for AoS
	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. Shoreline Management Plans – The AoS objective should align with the SMP aim and SMP policies	
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.**	

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.

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.
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: 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.	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 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: • 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.	Ensure an objective considering alternative / renewable technologies for energy production is included within the AoS framework. Ensure an objective relating to the prudent use of natural resources (including energy) is included within the AoS framework.

World Heritage Convention 1972	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.	Ensure protection of historic environment objective within AoS framework.
Convention on the Protection of Underwater Cultural Heritage (2001)	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. The Convention; • 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.	Ensure historic environment objective within AoS framework.
Convention on the Protection of the Archaeological Heritage (1992) – the 'Valetta Convention'.	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	Ensure historic environment objective within AoS framework.

	regional planners in order to ensure optimum conservation of archaeological heritage.	
European Landscape Convention (2000) – the 'Florence Convention'	The European Landscape Convention is part of the Council of Europe's work on natural and cultural heritage, spatial planning and the environment. The convention states that: • 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, tourism and recreation and, at a more general level, changes in the world economy are in many cases accelerating the transformation of landscapes. The aims of this Convention are to promote landscape protection, management and planning, and to organise European co-operation on landscape issues.	Ensure protection and enhancement of landscapes is considered as an Objective within the AoS.
Aarhus Convention 2001	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.	The AoS will be consulted upon and open to scrutiny as per the requirement of the relevant regulations.
WHO Guidelines for Community Noise 1999	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	Ensure that the health and well-being of people is addressed through an objective in the AoS

	internal and external noise levels that would provide an acoustic environment that is conducive to uninterrupted speech and sleep.	framework and that noise issues are considered.
WHO Night Noise Guidelines for Europe 2009	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. 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.	Ensure that the health and well-being of people is addressed through an objective in the AoS framework and that noise issues are considered.
Espoo Convention on Environmental Impact Assessment in a Transboundary Context (1991)	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). 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. 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. 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-	An AoS is being undertaken in accordance with the SEA Directive that will determine the significant effects of the new NPS and the integral SSA. 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

	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	the environment in another State of the European Economic Area.
Closing the Gap: Social Determinants of Health (World Health Organisation, 2008)	This report aims to: • Improve daily living conditions. • Tackle inequitable distribution of power, money and resources. • Measure and understand the problem and assess the impact on action. 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	New energy infrastructure has the potential to impact living conditions and human health. It is important that sites do not impact disproportionally on vulnerable members of society. The AoS should consider the improvement of health equity.
The OSPAR Convention	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: • 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.	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.

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

Plan, Policy or Legislation	Key Objectives / Targets / Guidance	Implications for the AoS
Environment Bill Policy Statement 2020	The Government's Environment Bill Policy Statement introduces new incentives, actions and planning tools to drive further improvements for nature. The Bill introduces a mandatory requirement for Biodiversity Net Gain in the planning system, to ensure that new developments contribute to the recovery of biodiversity and this requirement can also create new green spaces for local communities to enjoy. It also adds a new concept of Local Nature Recovery Strategies. The Environment Bill sets a new environmental governance framework as the UK leaves the European Union's environmental policy and legislative structures. The Bill will put the environment at the centre of policy making. It will make sure that we have a cleaner, greener and more resilient country for the next generation. It will place a legal duty on ministers of the crown in relation to five environmental principles listed in section 16(5) of the bill: • the principle that environmental protection should be integrated into the making of policies • the principle of preventative action to avert environmental damage • the precautionary principle, so far as relating to the environment • the principle that environmental damage should as a priority be rectified at source • the polluter pays principle	The AoS will need to consider need for improvements to nature and recovery of biodiversity.

DfT Single Departmental Plan 2019	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. Due to the nature of the document, there are too many objectives and targets to list, however, the six primary topics are: • supporting the creation of a stronger, cleaner, more productive economy; • helping to connect people and places, balancing investment across the county; • 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. 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.	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	Ensure biodiversity and accesses to services are covered by objectives within AoS framework.

	countryside and National Parks; and amends the law relating to public rights of way.	
Countryside and Rights of Way Act 2000 (CROW Act)	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). 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.	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	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. 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.	Ensure protection of Natura 2000 sites and consider these through HRA.
Environmental Protection Act (1990)	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: • Part I- establishes integrated pollution control and gives Local Authorities new powers to control air pollution from a range of prescribed processes;	Ensure that pollution to air and water is prevented or minimised.

	• Part II- improves the rules on waste disposal; and • Part III- covers statutory nuisances and clean air.	
National Parks and Access to Countryside Act 2006	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). 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.	Ensure protection of sites designated for nature conservation at the national and local level are protected.
Natural Environment and Rural Communities Act 2006	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'. 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.	Ensure biodiversity objective within AoS framework.
Guidance for Local Authorities on Implementing the Biodiversity Duty (2007)	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 is addressed in infrastructure and development projects and how well the planning process integrates biodiversity into planning and development control policies. Core Strategies and Local Development Plan Strategies set out the overarching policy framework for the plan area. Strategic objectives and policies should be	Ensure biodiversity objective within the AoS framework.

	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.	
UK Biodiversity Plan (1994)	This document represents the first United Kingdom biodiversity action plan. It contains three sections; • Section 1 – describes the UKs 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)	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. 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 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	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.

	continued UK focus, and an Implementation Plan was published in November 2013.	
UK Sustainable Development Strategy 2005	This strategy has four broad objectives: • 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 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.	Ensure the AoS considers the full range of sustainability issues.
UK Shared Framework for Sustainable Development; One Future – Different Paths 2005	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 affirmation that the whole of the UK will work to common goals without compromising the strengths which our diversity of approach offers.	Ensure the AoS considers the full range of sustainability issues.

National Infrastructure Plan (2014)	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. 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.	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 Environmental Assessment (2001)	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 modifying their physical and social environment, and how this in turn affects social and economic development.	AoS needs to consider health impacts and needs to note all elements of this document.

	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. 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.	
Children's Environment and Health Action Plan – Summary of current activities which address children's environment and health issues in the UK (2007)	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.	AoS needs to consider all vulnerable groups, including children.
A Children's Environment and Health Strategy for the United Kingdom (2009)	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 aims to build on and complement policies and activities already undertaken by government departments, devolved administrations, local and regional authorities	AoS needs to consider all vulnerable groups, including children.

	and the National Health Service (NHS). Some areas for improvement highlighted in this strategy include: • 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.
Clean Air Strategy, 2019	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	Ensure the inclusion of an air quality objective within the AoS framework.

	move to zero emission transport modes. The strategy links into other national level policies, outlining the same targets and strategies across multiple documents. 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: • 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. 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.	
Air Quality Plan for Nitrogen Dioxide in the UK, 2017	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 action to improve air quality in the "shortest possible time" as required by legal obligations to meet NO2 concentration thresholds.	Ensure the inclusion of an air quality objective within the AoS framework.

	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: • setting up a £255 million Implementation Fund; • establishing a Clean Air Fund; and • providing £100m for retrofitting and new low emission buses. The plan outlines the introduction of several new funding streams that local authorities can utilise to finance measures to reduce NO2 emissions.	
Climate Change Act 2008 and its 2050 Target Amendment Order, 2019	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: • 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. 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	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.

Climate Change Risk Assessment 2017	The Government published the UK Climate Change Risk Assessment (CCRA) in January 2017, the second assessment of its kind in the UK, following from the 2012 assessment. It sets out the main priorities for adaptation in the UK under the key themes identified in the CCRA 2017 Synthesis Report. It describes the policy context, and action already in place to tackle some of the risks in each area as well as highlights the constraints of the CCRA analysis and provides advice on how to take account of the uncertainty within the analysis. Note consideration of CCRA3, due to be laid before parliament by January 2022 should be taken once available.	Ensure that climate change resilience is addressed within the AoS framework through the inclusion of an appropriate objective.
UK Climate Change Risk Assessment 2017 Synthesis report: priorities for the next five years	This report outlines the UK Government's views on the main issues raised in the Climate Change Risk Assessment (CCRA) Evidence Report (an independent analysis funded by UK Government and Devolved Governments), to highlight actions already in place to manage the risks identified in the CCRA, and to outline UK Government plans for the future. This report sets out the main priorities for adaptation in the UK under five key topics identified in the CCRA Evidence Report: Natural environment and natural assets; Infrastructure; People and the built environment; Business and industry and International dimensions, and describes the policy context in each area.	The AoS framework should consider objectives that would promote an improved resilience to climate change.
Low Carbon Transition Plan 2009	This White Paper sets out the UK's first ever comprehensive low carbon transition plan to 2020. This plan states it will deliver emission cuts of 18% on 2008 levels by 2020 (and over a one third reduction on 1990 levels). Key steps include:	Ensure that reduction of Carbon, with a particular emphasis on road transport is

	• Getting 40% of our electricity from low carbon sources by 2020 • Helping make the UK a centre of green industry by supporting the development and use of clean technologies, including up to £120million investment in offshore wind and an additional £60 million to cement the UK's position as a global leader in marine energy • Transforming transport by cutting average carbon dioxide emissions from new cars across the EU by 40% on 2007 levels, supporting the largest demonstration project in the world for new electric cars, and sourcing 10% of UK transport energy from sustainable renewable sources by 2020	included as an Objective within the AoS. Ensure that reducing the need to travel by car is included as an Objective within the AoS.
Decarbonising Transport: Setting the Challenge 2020	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. 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. 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. The priorities for the Government, further distilled in the ministerial foreword, appear to be as follows:	Ensure that reduction of Carbon, with a particular emphasis on road transport is included as an Objective within the AoS. Ensure that reducing the need to travel by car is included as an Objective within the AoS.

	• 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. • 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. 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.	
Cutting Carbon, Creating Growth: Making Sustainable Local Transport Happen White Paper 2011	This outlines the need to improve transport links, to target investment in new projects that promote green growth to build a balanced and dynamic low carbon economy considered essential for future prosperity. States the need of a coherent transport plan to reduce the carbon emitted by transport and propose sustainable travel initiatives to promote greener travel over a range of transport facilities on a local and national level. It also actively encourages sustainable local transport schemes and the use of local authorities, free from central government control.	Ensure that reduction of Carbon, with a particular emphasis on road transport is included as an Objective within the AoS. Ensure that reducing the need to travel by car is included as an Objective within the AoS.

Carbon Plan: Delivering our low carbon future 2011	This plan sets out how the UK will achieve decarbonisation within the framework of energy policy: to make the transition to a low carbon economy while maintaining energy security, and minimising costs to consumers, particularly those in poorer households. It outlines the progress so far in terms of emissions as well the future vision in order to cut emissions by 80% by 2050.	Ensure that reduction of Carbon, with a particular emphasis on road transport is included as an Objective within the AoS. Ensure that the prudent use of natural resources (including energy) is included as an Objective within the AoS.
UKCP18	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. The projections can then be used to inform guidance such as the Environment Agency's guidance on flood risk assessment.	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	The Clean Growth Strategy deals specifically with the challenge of trying to grow the UKs 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 The guiding principles of the Clean Growth Strategy are to, through nurturing low carbon technologies, processes, and systems: • 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. 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: • accelerating uptake of ULEVs; • developing a more efficient and low carbon freight system; • 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.	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.

The Road to Zero, 2018	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 polices mentioned in this section. 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: • 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. 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 reduce emissions, the report strikes a balance to prioritise reductions in emissions and maintain economic growth. 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	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.

	travel, with reductions in emissions achieved through encouraging a high proportion of low-emission vehicles on the roads.	
Environment Act 1995	The Environment Act 1995 updates much of the earlier legislation on the areas that it extends to. The Act comprises: • 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.).	Ensure that a range of environmental objectives such as air quality protection are considered in relation to the AoS.
National Infrastructure Strategy	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. 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.	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.
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	Ensure that climate change resilience is addressed within the AoS framework through

	provides a long term strategy for how to adapt the UK's infrastructure to deal with the pressures of climate change.	the inclusion of an appropriate objective.
National Forest Inventory	This programme monitors woodland and trees within Great Britain. It includes the most in depth survey carried out on Britain's woodland and trees to date. The NFI provides an extensive and unique record of key information about our forests and woodlands. Woodland surveys and compiled forest inventories have been carried out at 10-15 year intervals since 1924.	Ensure flora and fauna is considered within the AoS framework
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	The Agriculture Act underpins a new agricultural system based on the principle of public money for public goods. It includes the following: • 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.	Ensure that a range of environmental objectives are considered in relation to the AoS.

Heritage Protection for the 21st Century 2007	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. It is predominantly aimed for England and Wales with some UK wide elements.	Ensure historic environment objective within AoS framework.
Ancient Monuments and Archaeological Areas Act 1979	Under the Act a monument which has been scheduled is protected against any disturbance including unlicensed metal detecting. 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.	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	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: • 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 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.	Ensure that flood and coastal erosion risk is included as an objective within the AoS framework.

	FRMPs also meet the aims of the National Flood and Coastal Erosion Strategy for England.	
National Environment and Rural Communities Act 2006	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: • 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: • 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	The AoS should consider including objectives that address the reduction of greenhouse gas emissions, as well as objectives that promote the transformation to

	• Creating up to 250,000 'green' jobs by 2030 in a 'Green Industrial Revolution'. 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).	an energy-efficient low carbon economy.
The Ten Point Plan for a Green Industrial Revolution (2020)	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: • 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.
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	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. 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.	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)	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	Nuclear power stations require water abstractions and discharges and have the potential to have significant adverse effects to water

(England and Wales) Regulations 2017	elements of the water cycle and enhance the quality of our groundwater, rivers, lakes, estuaries and seas.	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	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.	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.
Flood and Water Management Act 2010	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: • Flood and Coastal Erosion Risk Management • Strategies for Natural flood and coastal erosion • The establishment of regional flood and coastal communities.	Ensure that flood risk and coastal erosion risk is included as an objective within the AoS framework.
River Basin Management Plans	These plans set out how organizations, stakeholders and communities will work together to improve the water environment. A RBD covers an entire river system,	Ensure that the issue of water quality protection and enhancement is included as

	including river, lake, groundwater, estuarine and coastal water bodies and are designed to protect and improve the quality of the water environment.	an Objective within the AOS framework.
Flood Risk Regulations 2009	The Regulations identify and take action in areas with the most significant flood risks. The purpose of the Act is to: • 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	Ensure that flood and coastal erosion risk is included as an 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	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. 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	Ensure that the issue of water quality protection and enhancement is included as an Objective within the IIA framework.

	Agency may prevent or clear up the pollution, and recover the damages from the landowner or responsible person	
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 sets out a high-level actions to build on the developing partnership between government and businesses to address resource concerns.	Ensure that waste minimisation and resource 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 second 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	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. 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.	No implications. Informative only.

	The use of railways was promoted through the Strategic Rail Authority and makes provision for the better regulation of the railway industry.	
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 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.	No implications. Informative only.
National Policy Statement for National Networks 2014	The 'National networks national policy statement' sets out the: • 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 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.	No implications. Informative only.
Network Rail Delivery Plan 2019-2024	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.	No implications. Informative only.

	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 is activities around six themes: • safety; • efficiency; • sustainable growth; • people; • train service delivery; and • customers and communities. Each of these themes features individual targets related to the running of the rail network.	
Inclusive Transport Strategy 2018	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 issued surrounding physical access, access to information, and training for staff on the transport network. 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. 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.	No implications. Informative only.

A connected society – A strategy for tackling loneliness, 2018	This strategy notes the importance on local transport links and infrastructure in supporting social networks and facilitating interaction, key elements in combating loneliness.	No implications. Informative only.
Climate Change – The UK Programme 2006: Tomorrow's Climate Today's Challenge (House of Commons Environmental Audit Committee, 2006)	Although the 2000 Climate Change Programme helped put the UK on track, and even beyond, to meet the Kyoto greenhouse gas reduction commitment, this 2006 programme contains further commitments to help to achieve the national goal of reducing carbon dioxide to 60% below 1990 levels by 2050 (this has now been increased to 80% following the Climate Change Act (2008)). The Programme therefore sets out the Strategy for both international and national action. This Programme is based on a number of principles: • The need to take a balanced approach with all sectors and all parts of the UK playing their part. • The need to safeguard, and where possible enhance, the UK's competitiveness, encourage technological innovation, promote social inclusion and reduce harm to health. • The need to focus on flexible and cost effective policy options which will work together to form an integrated package. • The need to take a long-term view, looking to targets beyond the first Kyoto commitment period and considering the need for the UK to adapt to the impacts of climate change. • The need for the Programme to be kept under review. The Programme sets out the measures to reduce greenhouse gas emissions in six broad sectors: energy supply, business, transport, domestic, agriculture, forestry and land management and public and local government. The progress towards achieving UK and international climate change objectives has been (and	The AoS framework should consider an objective relating to the reduction of greenhouse gas emissions.

	will continue to be) monitored and reviewed. The UK Climate Change Programme: Annual Report to Parliament 2007 describes the steps taken to achieve the long term goals, and indicates the progress against objectives. Taking the results of the EU Emissions Trading Scheme into account, greenhouse gas emissions in 2005 were 19.1 per cent below base year levels and carbon dioxide emissions in 2006 were about 11 per cent below 1990 levels.	
Stern Review of the Economics of Climate Change (Stern, 2007)	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. The document clearly identifies that adaptation is the only available response for impacts that will occur over the next few decades.	The AoS should consider the role of the new NPS in reducing carbon emissions but also adaptation of infrastructure.
Air Pollution: Action in a Changing Climate (Defra, 2010)	The key messages from this document are: • 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.	The AoS framework should consider including objectives which seek to limit air pollution and reduce the impacts of air pollution on climate change.

	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	
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 Through the 2020s (CCC, 2010)	This report from the Committee on Climate Change, the Government's independent advisor, explains why the UK should aim for an 80% reduction in CO2 emissions by 2050 and how that is attainable, and recommends the first three budgets that will define the path to 2022. In addition, the Fourth Carbon Budget report outlines the emission targets for the 2023-2027 time period. Both reports make recommendations on how these targets could be reached while cutting carbon emissions across a range of sectors.	The AoS should consider including objectives that address climate change and the reduction of carbon emissions, as well as objectives that promote the transformation to a low carbon economy.
UK Renewable Energy Road Map 2013	The Renewable Energy Roadmap (the Roadmap) shows both strong growth in renewable electricity deployment over the last year and that the UK is on track to meet the first interim target on the way to the ambitious target of 15% renewable energy consumption by 2020. The 2012 update sets out the progress and changes delivered in the sector over the past year, and set out the challenges and actions for the year ahead. In 2011, renewable energy accounted for 3.8% of energy consumption, up from 3.2% in 2010. The Roadmap expects it to increase to over 4% in line with the first interim target on the way to 2020. The 2013 update provides analysis on further achievements and changes that have taken place in 2013.	Note that this Road map, while not directly replaced has effectively been replaced by the 'Ten Point Plan'.

Enterprise and Regulatory Reform Act 2013	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.	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.
Environmental Permitting (England and Wales) Regulations 2016	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. 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). The aim of the regime is to: • 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.	Water extraction for cooling and the associated discharges will require permitting at a site level. This will be considered at the EIA stage. The AoS should consider the protection of the environment and include appropriate objectives if necessary.

	• 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	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: • 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. 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	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	These Regulations amend the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. 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	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)	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: • 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	The Act aims to shift power from central government to the hands of individuals, communities and councils. 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.	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.

	The Localism Act includes five key measures that underpin the Government's approach to decentralisation: • 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	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. Key areas of the Act include: • 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	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.

	• 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	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: • 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.
The Planning Act 2008	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: • 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.	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

	• 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. 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.	
Overarching National Policy Statement for Energy (EN-1) (DECC, 2011) Fossil Fuel Electricity Generating Infrastructure NPS (EN-2) Renewable Energy Infrastructure NPS (EN-3) Gas Supply Infrastructure and Gas and Oil Pipelines NPS (EN-4) Electricity Networks Infrastructure NPS (EN-5) Nuclear Power Generation NPS volume I Nuclear Power Generation NPS volume II (EN-6)	EN-1 sets out national policy for the energy infrastructure. It has effect, in combination with the relevant technology-specific NPS (EN-2, EN-3, EN-4, EN-5, EN-6), on the decisions by the Infrastructure Planning Commission (IPC) on applications for energy developments that fall within the scope of the NPSs. For such applications this NPS, when combined with the relevant technology-specific energy NPS, provides the primary basis for decisions by the IPC. The National Networks NPS sets out how the government will make decisions on development consent orders for Nationally Significant Infrastructure Projects.	Noted for information – this project is to assess the replacements / updates to these NPS.

National Pollinator Strategy 2014-2024	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. 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.	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	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. The strategy aims to: • 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.

	• start a conversation with industry, its workforce, customers and communities about the future of industry in a net zero world.	
UK Marine Strategy	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. 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. Part 1 of the Marine Strategy was updated in 2019, marking the beginning of the second implementation cycle of the UK Marine Strategy.	Ensure protection of our marine environment is considered as an Objective within the AoS.

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**
England		

25 Year Environment Plan, 2018	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. 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); • 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. The plan emphasises the assumed benefits of the UK's departure from the EU in allowing for a reorganisation and reprioritisation of the UK's efforts related to the environment. Specific examples are not given, however the challenging targets listed, as summarised above, do offer strong opportunities to set high environmental standards, some of which the LTP4 can align itself to.	The AoS will need to consider implications for air and water quality, at risk wildlife and improving natural habitats.
Natural Environment White Paper (2011)	The Natural Environment White Paper has four ambitions: • Protecting and improving our natural environment; • Growing a green economy; • Reconnecting people and nature International; and • EU leadership.	Ensure biodiversity and landscape form part of AoS framework.

	It looks at ecosystem services provided by natural systems and promotes a step-change in nature conservation which makes sustainable use of natural capital and natural networks by working at a landscape scale. It aims to ensure that by 2020 17% of England is managed effectively to safeguard biodiversity.	
The Smoke Control Areas (Authorised Fuels) England (No. 2) Regulations 2014	The Regulations provide a list of fuels which are authorised to be used in smoke control areas in England. The compliance actions are as follows: If located in a smoke control area, ensure that only the following fuels are used: • Anthracite; • Semi-anthracite; • Electricity; • Gas; • Low volatile steam coals; and • Fuels described in the Schedule to these regulations. The overall purpose of the Regulations is to improve air quality.	Protection of air quality should be considered within the AoS.
National Planning Policy Framework (NPPF 2019)	Sets out Government planning policy for England. The purpose of the planning system is to contribute to the achievement of sustainable development, the three dimensions of which are: • economic role – contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;	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.

	• a social role – supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; • environmental role – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimize waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy. Associated with the NPPF are a number of Planning Practice Guidance documents. These can be viewed at; Planning practice guidance - GOV.UK (www.gov.uk).	
Landscape Character Framework	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. Key components are: • 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 Strategy for England 2020	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. The Strategy has three core ambitions concerning future risk and investment needs: 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.	Ensure that flood and coastal erosion risk is included as an objective within the AoS framework.
Government Policy Statement on Flood and Coastal Erosion Risk Management Strategy	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: • 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	There are 11 marine plans in England. A marine plan will: • 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	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

	• integrate with planning on land • save time and money for investors and developers by giving clear guidance on things to consider or avoid • encourage shared use of busy areas to benefit as many industries as possible • encourage developments that consider wildlife and the natural environment	consider sustainable use of the marine environment, in particular relating to water quality and use of the coastal zone.
Biodiversity 2020: A strategy for England's wildlife and ecosystem services	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. 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	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)	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. 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.	AoS needs to consider all vulnerable groups, as well as the wider population.

Contaminated Land (England) Regulations 2006 as amended by the Contaminated Land (England) (Amendment) Regulations 2012	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.	Ensure that the issue of contamination is addressed through an Objective in the AoS framework.
English National Parks and Broads UK Government Vision and Circular 2010 (DEFRA 2010)	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: • 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	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

amended by The Environmental Damage (Prevention and Remediation) (England) (Amendment) Regulations 2019		Objective in the AoS framework.
Safeguarding our Soils: a strategy for England 2009	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 • 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)	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:	Ensure that waste minimisation and resource efficiency are included as an Objective within the AoS.

(Amendment) Regulations 2014	• Produce waste • Import or export waste • Carry or transport waste • Keep or store waste • Treat waste • Dispose of waste • Operate as waste brokers or dealers	
National Review of Waste Policy in England 2011	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: • Sustainable use of materials and waste prevention • Regulations and enforcement • Food waste • Energy recovery • Infrastructure and planning • Next steps in waste policy.	Ensure that waste minimisation and resource efficiency are included as an Objective within the AoS.
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	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: • 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. 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: "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" 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	Ensure that the health and well-being of people is addressed through an objective in the AoS framework and that noise issues are considered.

	WHO Guidelines for Community Noise and BS8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.	
Roads Investment Strategy 2020 - 2025	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: • a network that supports the economy; • a safer and more reliable network; • a greener network; • a more integrated network; and • a smarter network. 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. RIS2 also sets specific monitoring targets for Highways England to ensure: • 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.	No implications. Informative only.

Planning for the Future: A guide to working with Highways England on planning matters	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).	Consideration of the need for transport planning to integrate with land use planning in the AoS framework.
Highways England Growth and Housing Fund	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. 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 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.	No implications. Informative only.
Future Water, the Government's Water Strategy for England (Defra, 2008)	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. 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	The AoS framework should consider protection and enhancement of the water environment and management of surface water sustainably

	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.	
Government Forestry and Woodlands Policy Statement (2013)	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. 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. To achieve this the Policy Statement sites key objectives (in priority order): • 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.	It is important for the AoS to consider the protection of important trees, woods and forests.
National Planning Policy for Waste (2014)	This document sets out detailed waste planning policies. It should be read in conjunction with the National Planning Policy Framework (2012) and National Policy Statements for Waste Water and Hazardous Waste. The policy provides guidance to local planning authorities in planning for future facilities and determining planning applications.	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. 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.
Climate Change: Second national adaptation programme (2018-2023)	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 It sets out the key actions needed in relation to the following six priority areas of climate change risks for the UK; • Natural environment; • Reducing pressures from spreading diseases and non-native invasive species; • Infrastructure; • People and the built environment; • Business and industry; and • Local government.	New energy infrastructure could potentially be situated in floodplains or coastal areas and are therefore susceptible to the effects of climate 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)	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.	The AoS will need to consider potential impacts on important trees. However, it is acknowledged that

(England) Regulations 2012	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: • 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; • 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.	identification of individual trees would not be undertaken until EIA.
The National Flood and Coastal Erosion Risk Management Strategy for England (FCERM) (Environment Agency, 2021)	The Flood and Water Management Act 2010 places a statutory duty on the Environment Agency to develop a National Flood and Coastal Erosion Risk 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. 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.	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.

	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.	
A Strategy for England's Trees, Woods and Forests (2007)	Aims to provide a resource of trees, woods and forests where they can contribute environmental, economic and social benefits now and for future generations; to ensure that existing and newly planted trees, woods and forests are resilient to climate change and contribute to biodiversity and natural resources adjusting to a changing climate; to protect and enhance water, soil, air, biodiversity and landscape, and the cultural and amenity values of trees and woodland; to increase the contribution that trees, woods and forests make to quality of life; and to improve the competitiveness of woodland businesses and promote development of new/improved markets for sustainable woodland products and ecosystem services. It seeks to do this through the long-term sustainable management of trees, woods and forests; by seeking 'the right tree in the right place'; by effective use of public investment; and by ensuring synergies with other Government policies.	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.
The Planning White Paper	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 proposals to reform the current system of calculating housing need proved controversial.	Noted – the NPS forms part of the wider planning system.

	The three pillars of the white paper are; • Planning for development; • Planning for beautiful and sustainable places; and • Planning for infrastructure and connected places.	
'Project Speed'	Rail Project SPEED (Swift, Pragmatic and Efficient Enhancement Delivery) was jointly developed by the Department for Transport (DfT) and Network Rail. Infrastructure projects at different stages of development have been reviewed to identify how government funding could go further and work could be carried out faster. This approach identified 10 key themes to lower costs and speed up the delivery of infrastructure schemes, such as rapidly increasing the use of innovative construction methods and removing complexity from planning processes. These new and innovative ways of working will be rolled out across all rail upgrades, with the intention of: • ensuring passengers experience better journeys more quickly • giving greater value to taxpayers • transforming the pace and way in which our railways are improved	The AoS should consider objectives that do not adversely affect the efficiency of the transport system.
Wales		

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 Wales that are of special architectural or historic interest ("listed buildings"). Part 4 makes other provision about the historic environment in Wales, including provision; • 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.	Ensure historic environment objective within AoS framework.
Future Wales – The National Plan 2040	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.	The AoS should consider objectives which promote resilience to the impacts of climate change.
Future Wales Integrated Sustainability Appraisal	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	Ensure the AoS considers the full range of sustainability issues.

	recent version. It presents the potential positive and negative effects of the Draft NDF Including Proposed Changes, to inform the consultation process.	
Future Wales Habitats Regulation Assessment	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 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.	Ensure protection of Natura 2000 sites and consider these through HRA.
Future Wales Collection of Evidence	The report has been prepared to assist readers of Future Wales – The National Plan 2040 in understanding the range of evidence that has informed its preparation.	No implications. Informative only
Prosperity for All: A Low Carbon Wales	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. 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.	The AoS should consider including objectives that address the reduction of carbon emissions

Policy Statement on Local ownership of energy generation in Wales – benefitting Wales today and for future generations	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 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.	No implications. Informative only.
Planning Policy Wales (Edition 11, 2021)	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). There are a number of goals and objectives in relation to the following topics: • People and Places: Achieving Well-being Through Placemaking • Strategic and Spatial Choices • Active and Social Places • Productive and Enterprising Places • Distinctive and Natural Places The document offers advice and guidance, for example, how local planning authorities should plan, manage and write Local Development Plans.	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.

Technical Advice Notes (TANs) TAN 5: Nature Conservation and Planning (2009)	This Technical Advice Note provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. Some key principles which the town and country planning system in Wales should seek to achieve include: • 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. 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.	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. Baseline data should also be obtained in relation to the location of internationally and nationally important nature conservation sites, for example SPAs.
TAN 6: Planning for Sustainable Rural Communities (2010)	This Technical Advice Note provides guidance on how the planning system can contribute to: • Sustainable rural economies. • Sustainable rural housing. • Sustainable rural services. • Sustainable agriculture. It advises planning authorities to produce development plans which set out the spatial vision for rural communities. This should be based on a sound	The AoS should consider objectives relating to the protection and sustainable development of rural areas. The principles of this TAN should be considered in the preparation of the new NPS.

	understanding of the functional linkages within the area and the potential for improving the sustainability of the existing settlement pattern. Development plans should also clearly define local need by taking into account the social, economic and environmental characteristics of the area.	
TAN 11: Noise (1997)	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.	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. Noise and vibration should also be considered when assessing effects on other environmental receptors.
TAN 13: Tourism (1997)	The Wales Tourist Board has responsibility for promoting and developing tourism in Wales. It has a duty to advise the 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	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

	innovative projects, appropriate facilities for the countryside or designated areas and the provision of facilities in historic towns and seaside resorts.	number of objectives addressing environmental protection.
TAN 14: Coastal Planning (1998)	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. 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. 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. TAN14 specifically provides advice on: • Coastal Change and Coastal Erosion; • Recreation development; • Heritage coasts and non-statutory coastal groupings; and • Shoreline Management Plans.	The AoS framework should contain objectives that address coastal issues such as water quality, biodiversity, landscape and heritage etc. 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.

	Note, TAN14 will be combined with TAN15 in a revised document due to be published in September 2021 by Welsh Government.	
TAN 15: Development and Flood Risk (2004)	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. Note, TAN14 will be combined with TAN15 in a revised document due to be published in September 2021 by Welsh Government.	The AoS needs to include objectives relating to flood risk and the need to manage runoff effectively. 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.
TAN 16: Sport, Recreation and Open Space (2009)	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. 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.	The AoS should consider objectives which seek to protect areas of open space and areas used for sport and recreation.

TAN 18: Transport (2007)	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. 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.	The AoS should consider objectives that do not adversely affect the efficiency of the transport system and seek to reduce greenhouse gas emissions from transportation sources. 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.
TAN 21: Waste (2014)	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. 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	The development and operation of the facilities would generate waste throughout the project lifecycle. The AoS should consider the management of wastes

	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.	associated with the development, operation and decommissioning of new energy infrastructure.
The Waste (Miscellaneous Provisions) (Wales) Regulations 2012	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. 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.	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	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. 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: • be made in writing to the authority • include all of the information specified on the form • be accompanied by:	The AoS will need to consider potential impacts on important trees.

	• 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 Smoke Control Areas (Authorised Fuels) (Wales) Regulations 2019	The Regulations provide a list of fuels which are authorised to be used in smoke control areas in Wales. The compliance actions are as follows: If located in a smoke control area, ensure that only the following fuels are used: • Anthracite; • Semi-anthracite; • Electricity; • Gas; • Low volatile steam coals; and • Fuels described in the Schedule to these regulations. The overall purpose of the Regulations is to improve air quality.	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	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. 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	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

Planning (Development Management Procedure) (Wales) (Amendment) Order 2017	development, the maintenance of registers of planning applications and related matters.	development should be considered.
Rural Development Plan 2007-2013	Under the EU Rural Development legislation, the Rural Development Plan for Wales provides a framework to: • Strengthen our farming and forestry industries in Wales. • Maintain and protect our environment and rural heritage. • Improve economic competitiveness of rural communities and areas. 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.	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)	This Rural Development Programme is a 7-year investment programme supporting a wide range of activities to achieve its three main objectives: • 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.	The AoS framework should consider including objectives which encourage sustainable management of agriculture and the environment.

	All projects funded by the Programme must align with one or more of the six European Rural Development Priorities.	
Towards Zero Waste - One Wales: One Planet - The Overarching Waste Strategy Document for Wales (2010)	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. Towards Zero Waste means that: • 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. 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. Furthermore, recycling will be maximised, the amount of residual waste produced minimised and as close to zero landfill as possible achieved.	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.
Llwybr Newydd: the Wales Transport Strategy 2021	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: • 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	The AoS should consider objectives which support the use of sustainable transport.

	• Priority 3: Encourage people to make the change to more sustainable transport	
One Wales: One Planet – the Sustainable Development Scheme for Wales (2009)	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. The vision for a Sustainable Wales is as follows: • 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.	The AoS should consider objectives which support the reduction of greenhouse gas emissions where possible, for example, in the transportation of raw materials. The economic, social and environmental effects of new energy development will be considered in detail throughout the AoS process.
The Climate Change Strategy for Wales (2010)	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. The strategy supports the vision for 2050 as set out in the One Wales: One Planet – the Sustainable Development Scheme for Wales (2009).	The AoS should consider objectives which support the reduction of greenhouse gas emissions where possible. The AoS should consider objectives which improve the

	Climate change adaptation is discussed with respect to the transport, business, residential, agriculture and land use, public and waste sectors.	resilience of energy infrastructure to changing climatic conditions throughout the project's lifecycle. Note 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)	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. The vision of the strategy is as follows: "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". 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.	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 Strategic Statement: Action Plan (2010)	The Action Plan clearly lists objectives with respect to heritage assets and the historic environment and the associated practical action required to achieve these 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.	The AoS should consider including objectives which aim to protect heritage assets and the historic environment.
Water Strategy for Wales (2015)	The strategy sets out the strategic direction for water policy in Wales over the next 20 years and beyond. 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”.	The AoS should consider objectives which contribute to the sustainable use of water resources.
Natural Resource Policy (Welsh Government) (2017)	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: • Delivering nature-based solutions, • Increasing renewable energy and resource efficiency, • Taking a place-based approach 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.	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-active and joined-up way than was previously possible. The Act has seven main parts: • 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	The AoS should give particular regard to sustainable management of natural resources, climate change, fisheries and marine licencing and flood and coastal erosion.
Wellbeing of Future Generations (Wales) Act 2015	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. 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.	The AoS should include objectives that measure sustainability, and be considerate of well-being objectives/goals.
Planning (Wales) Act 2015	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: • A modernised framework for the delivery of planning services	The AoS should consider objectives that encourage a strategic approach in planning.

	• Strengthening the plan led approach – the act introduces a legal basis for the preparation of a National Development Framework and Strategic Development Plans • 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)	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: • 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	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.

	• Prioritising investment in the most at risk communities.	
The Contaminated Land (Wales) Regulations 2006 as amended by the Contaminated Land (Wales) (Amendment) Regulations 2012	These regulations make provision, in relation to Wales, for the identification and remediation of contaminated land under Part 2A of the Environmental Protection 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.	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.
Welsh National Marine Plan (Welsh Government (2019)	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. It sets out the vision for the Welsh inshore and offshore marine plan regions as: • Welsh seas are clean, healthy, safe, productive and biologically diverse: - 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 conditions. Stretches of coast are divided into 'management units', and for each of these one of four different management policies are agreed, as follows: • 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.	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 shoreline environment and prevent flooding and/or erosion.
Natural Wales Resources Technical Guidance	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: • 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)	The AoS should consider guidance provided by NRW Techncial Notes.

	NRW has further relevant guidance under development which will be added to their website as soon as it is available.	
Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009	These regulations came into force on 6th 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)	The National Plan 2040 is a 20-year national development plan that covers the whole of Wales. It has been produced by Welsh Government and covers the period up to 2040. The plan seeks to provide a strategy for addressing key national priorities through the planning system.	The AoS will need to consider full range of sustainability issues set out in the Plan

Prosperity for All: A Climate Conscious Wales (2019)	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: • 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 Authorities in Wales (2021)	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.	Ensure climate change adaptation is considered as an objective within the AoS
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)	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. 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. The strategy aims to reduce the risk to people and communities from flooding and coastal erosion through five key objectives: • 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 • Providing an effective and sustained response to events	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.
Scotland		
Scottish Planning Policy (2014)	This document is a statement of the Scottish Government's policy on nationally important land use planning matters. 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.	The AoS needs to include a comprehensive set of objectives that promote environmental protection. The timescale over which the impacts of new energy

	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. 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).	infrastructure will be realised should also be considered.
Scotland's Third National Planning Framework (2014)	The document represents the spatial expression of the Government Economic Strategy and sets out a long-term vision for development and investment across Scotland over the next 20 to 30 years. The overall vision is for Scotland to be a successful, sustainable place, a low carbon place, a natural, resilient place and a connected place. The spatial strategy shows where there will be opportunities for growth and regeneration, investment in the low carbon economy, environmental enhancement and improved connections across the country. It also indicates where most change is likely to occur, from city regions to rural areas and coastal towns.	The National Planning Framework needs to be considered for any new development to ensure the vision and targets in the document are met. To achieve this, the AoS should consider objectives that address the key drivers of the framework.
Scottish Energy Strategy: The Future of Energy in Scotland (2017)	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: • Energy efficiency; • Renewable and low carbon solutions; • Consumer engagement and protection;	There are clear linkages between this strategy and the Energy NPS. The AoS to consider these linkages.

	• System security and flexibility; • Innovative local energy systems; and • Strengthening the oil and gas industries. 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.	
The Nature Conservation (Scotland) Act 2004 (Authorised Operations) Order 2011	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 (operations by owners or occupiers of sites of special scientific interest) of the Nature Conservation (Scotland) Act 2004. 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.	The AoS should take into account impacts upon habitats and species, and should consider provision for the preservation and protection of biodiversity and the environment.
Scotland's Biodiversity Strategy (consists of two documents - 2020 Challenge for Scotland's Biodiversity - A Strategy for the conservation and enhancement of	The original strategy – Scotland's Biodiversity: It's in Your Hands – was published in 2004. In 2013, it was supplemented by the 2020 Challenge for Scotland's Biodiversity. The two documents together constitute the Scottish Biodiversity Strategy. The 2020 Challenge for Scotland's Biodiversity sets out the major steps needed to improve the state of nature in Scotland. Scotland's 2020 Challenge aims to: • protect and restore biodiversity on land and in our seas, and to support healthy ecosystems	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.

biodiversity in Scotland and Scotland's Biodiversity: It's in Your Hands (2003))	• connect people with the natural world, for their health and well-being, and to involve them more in decision making • maximise the benefits for Scotland of a diverse natural environment and the services it provides, contributing to sustainable economic growth.	
Wildlife and Natural Environment (Scotland) Act 2011 (as amended)	The Act affected game-shooting, species protection, and introduced new wildlife offences into Scotland such as vicarious liability. Amongst other things it: • 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; • required three-yearly reports to be published by public bodies on compliance with the Biodiversity Duty.	Ensure the protection and enhancement of biodiversity is included as an objective within the AoS.
The Waste (Scotland) Regulations 2012	These regulations outline and expand on the duty of care responsibilities of businesses with respect to waste they produce. The main compliance actions are as follows:	Objectives that promote the reduction of waste sent for disposal and encourage re-

	• 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 From 1 January 2014, ensure glass, metal, plastic, paper and card is separated for collection. Take steps to avoid cross contamination of these materials	use, recycling and recovery of waste should be considered. 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.
The Air Quality Standards (Scotland) Regulations (2010)	Regulations made under powers conferred by section 2(2) of the European Communities Act. It details the limit or target values for several pollutants considered of concern for human health for the purpose of Air Quality Management.	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.
The Air Quality (Scotland) Amendments Regulations 2016	The regulations set out the objectives adopted in Scotland for the purpose of Local Air Quality Management. 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; • which are situated outside of buildings or other natural or man-made structures; and • where members of the public are regularly present.	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.
Cleaner Air for Scotland – the Road	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	The AoS should seek objectives to avoid air quality

to a healthier future (the Scottish Government 2015)	and its partner organisations propose to achieve further reductions in air pollution and fulfil legal responsibilities as soon as possible.	impacts. New power stations have the potential to result in emissions to air throughout the project lifecycle.
Contaminated Land (Scotland) Regulations (2000 and 2005)	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. 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.	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 Environmental Noise (Scotland) Amendment Regulations 2018	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. 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.	New energy infrastructure could result in noise disturbance to local populations as a result of the 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.
Climate Change (Scotland) Act 2009	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.	Development of renewable generation would reduce reliance on non-renewable sources of power that lead to high levels of greenhouse gas emissions. Objectives should seek to reduce greenhouse gas emissions during other stages of energy infrastructure development, for example, the transportation of raw materials and waste. 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	The Regulations provide a list of fuels which are authorised to be used in smoke control areas in Scotland. The compliance actions are as follows: If located in a smoke control area, ensure that only the following fuels are used: • Anthracite; • Semi-anthracite; • Electricity; • Gas; • Low volatile steam coals; and • Fuels described in the Schedule to these regulations. The overall purpose of the Regulations is to improve air quality.	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 Programme (2019-2024)	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 Climate Change Risk Assessment (UK CCRA) 2017, published under section 56 of the UK Climate Change Act 2008. 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: • Outcome 1: Our communities are inclusive, empowered, resilient and safe in response to the changing climate	Development of new energy infrastructure needs to be undertaken with consideration of climate change throughout the project lifecycle. Objectives should seek to ensure that development is resilient and adaptable to the impacts of climate change, throughout the project lifecycle.

	• 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	
Climate Change (Emissions Reduction Targets) (Scotland) Act 2019	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. 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.	Objectives should seek to reduce greenhouse gas emissions during other stages of energy infrastructure development, for example, the transportation of raw materials and waste. The AoS should consider objectives which improve the resilience of energy infrastructure to changing climatic conditions throughout the project's lifecycle.

The Water Environment (Controlled Activities) (Scotland) Regulations 2011	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: • groundwater, • wetlands (directly associated with surface and groundwater bodies); • rivers; • lochs; • transitional waters (estuaries and saline lagoons); and • coastal waters (3nm from territorial baseline). The controlled activities include: • 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 • adverse impact upon the water environment. 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.	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.

2020 Challenge for Scotland's Biodiversity - A Strategy for the conservation and enhancement of biodiversity in Scotland	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. There are three central aims of the 2020 challenge: • 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)	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. The primary purpose of this Framework is to: • Provide guidance to planning authorities to help secure growth in the visitor economy • 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.	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.
Scotland's Zero Waste Plan (2010)	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	The AoS should consider waste recycling from the

	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. 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.	construction and operation of energy infrastructure.
Scotland's Forestry Strategy 2019-2029	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. Objectives • 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 • Increase the use of Scotland's forest and woodland resources to enable more people to improve their health, well-being and life chances Priorities • Ensuring forests and woodlands are sustainably managed • Expanding the area of forests and woodlands, recognising wider land-use objectives	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.

	• 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	
Forestry and Land Management (Scotland) Act 2018	The Forestry and Land Management (Scotland) Act 2018 makes new provisions regarding Scottish Ministers' functions in relation to forestry. The Act sets out the following, among other things; • 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 emphasis on the importance of partnership working and co-operation among authorities to help achieve the goal of reducing flood risk.	Ensure that flood risk is included as an objective within the AoS framework.
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) (Scotland) Regulations 2010	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 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: • 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.	The AoS will need to consider potential impacts on important trees.

Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017	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.	Energy infrastructure has the potential to full under Schedule 1 and 2 developments in the EIA 2011 regulations and therefore would be subject to an Environmental Impact Assessment.
The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013	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.	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.
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)	Sets out the role of the planning system in addressing historical contamination. It considers: • 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.	The AoS should consider objectives which address the assessment and use of contaminated land sites. Contaminated land sites may be suitable for the development of energy infrastructure if appropriate management measures are implemented.
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.	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. If inappropriately developed, energy infrastructure could potentially impact upon 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	The purpose of this PAN is to: • 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	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 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	Development of new energy infrastructure needs to be undertaken with consideration of climate change throughout the project lifecycle. Objectives should seek to ensure that development is resilient and adaptable to the impacts of climate change,

	take a cross-cutting, systems based approach that harnesses opportunities for inclusive jobs, growth and well-being.	throughout the project lifecycle.
Flood Risk Management Act (Scotland) (2009)	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.	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.

Appendix D. Baseline Data and contextual information

Sustainability Topic / Baseline	England	Scotland	Wales	Northern Ireland
Climate Change: Regional distribution of net greenhouse gas emissions	Expressed in terms of global warming potentials and includes the source emissions of CO_2, CH_4, N_2O, HFCs, PFCs, SF_6 and NF_3[1]. NB: 2.4% remains unallocated. Baseline years for UK GHG emissions are 1990 for CO_2, CH_4, N_2O and 1995 for fluorinated gases.			
	As of 2018, England had approximately 81.3% share of total net GHG emissions[2].	As of 2018, Scotland had approximately 8.2% share of total net GHG emissions[3].	As of 2018, Wales had approximately 7.0% share of total net GHG emissions[4].	AS of 2018, Northern Ireland had approximately 3.5% share of total net GHG emissions[5].
	Supporting Trend Data:			

[1] Department of Energy and Climate Change (2016) *UK Greenhouse Gas Inventory, 1990 to 2014.* Available: http://uk-air.defra.gov.uk/reports/cat07/1605241007_ukghgi-90-14_Issue2.pdf

[2] National Atmospheric Emissions Inventory (2016) *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2014.* Available: http://uk-air.defra.gov.uk/reports/cat07/1606140853_DA_GHGI_1990-2014_Report_v1.pdf

[3] National Atmospheric Emissions Inventory (2016) *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2014.* Available: http://uk-air.defra.gov.uk/reports/cat07/1606140853_DA_GHGI_1990-2014_Report_v1.pdf

[4] National Atmospheric Emissions Inventory (2016) *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2014.* Available: http://uk-air.defra.gov.uk/reports/cat07/1606140853_DA_GHGI_1990-2014_Report_v1.pdf

[5] UK local authority carbon dioxide emissions estimates 2018 (published 2020) Available: UK local authority carbon dioxide emissions estimates 2018 (publishing.service.gov.uk)

<table>
<tr><td></td><td colspan="4">Total emissions[6] of direct greenhouse gases have decreased by 44% between 1990 and 2019 and 3% between 2018 and 2019. This decline between 1990 and 2019 is driven predominantly by a decrease in emissions from the energy supply sector – particularly from power stations.

CO_2 is the largest contributor to global warming in the UK. As of 2019, CO_2 emissions were 454.8 Mt CO_2 equivalent, 43.8% below the 1990 level. CH_4 is the second most significant greenhouse gas in the UK after CO_2 and since 1990, emissions of CH_4 have decreased by 59.7%. As of 2015, methane emissions were 54 Mt CO_2 equivalent.

As of 2019, emissions of N_2O were 22 Mt CO_2 equivalent. Emissions of N_2O have declined 55.1% since 1990.

Emissions of the F-gases (HFCs, PFCs, SF_6 and NF_3) totalled 13 Mt CO2 equivalent in 2019. Since 1990 the overall decrease in their emissions has been 22.6%.</td></tr>
<tr><td rowspan="2">Climate change:

Contribution of sectors to greenhouse gas emissions</td><td colspan="4">Total GHG emissions expressed as MtCO_2e.

NB: Land Use, Land Use Change and Forestry (LULUCF) is a net remover of CO_2e in England, Scotland and Wales.</td></tr>
<tr><td>As of 2018, the GHG emissions per sector in England were[7]:

Agriculture: 26,000 CO_2e
Business: 60,000 CO_2e
Energy Supply: 69,000 CO_2e
Industrial Processes: 8,000 CO_2e
Public: 6,000 CO_2e</td><td>As of 2018, the GHG emissions per sector in Scotland were[8]:

Agriculture: 7,000 CO_2e
Business: 8,000 CO_2e
Energy Supply: 7,000 CO_2e
Industrial Processes: 500 CO_2e
Public: 1,000 CO_2e</td><td>As of 2018, the GHG emissions per sector in Wales were[9]:

Agriculture: 6,000 CO_2e
Business: 9,00, CO_2e
Energy Supply: 11,000 CO_2e
Industrial Processes: 2,000 CO_2e
Public: 325 CO_2e</td><td>As of 2018, the GHG emissions per sector in Northern Ireland were[10]:

Agriculture: 5,000 CO_2e
Business: 2,000 CO_2e
Energy Supply: 3,000 CO_2e
Industrial Processes: 170 CO_2e
Public: 150 CO_2e</td></tr>
</table>

[6] Final UK greenhouse gas emissions national statistics: 1990-2019. Available: https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2019

[7] National Atmospheric Emissions Inventory (2021) *Greenhouse Gas Inventories for England, Scotland, Wales & Northern Ireland: 1990-2018.* Available: https://naei.beis.gov.uk/reports/reports?section_id=4

[8] National Atmospheric Emissions Inventory (2021) *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2018.* Available: https://naei.beis.gov.uk/reports/reports?section_id=4

[9] National Atmospheric Emissions Inventory (2021) *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2018.* Available: https://naei.beis.gov.uk/reports/reports?section_id=4

[10] National Atmospheric Emissions Inventory (2021) *Greenhouse Gas Inventories for England, Scotland, Wales and Northern Ireland: 1990 – 2018.* Available: https://naei.beis.gov.uk/reports/reports?section_id=4

	Residential: 56,000 CO_2e Transport: 101,000 CO_2e Waste Management: 17,000 CO_2e LULUCF: - 5,000 CO_2e	Residential: 6,000 CO_2e Transport: 13,000 CO_2e Waste Management: 2,000 CO_2e LULUCF: - 5,000 CO_2e	Residential: 4,000 CO_2e Transport: 6,000 CO_2e Waste Management: 1,000 CO_2e LULUCF: - 400 CO_2e	Residential: 3,000 CO_2e Transport: 4,000 CO_2e Waste Management: 800 CO_2e LULUCF: 510 CO_2e
	Supporting Trend Data[11]: As of 2019, emissions in the energy supply sector accounted for 21% of total net direct greenhouse gas emissions and has declined from 279 $MtCO_2e$ in 1990 to 106 $MtCO_2e$ in 2018 (-62%). As of 2019, emissions in the business sector accounted for 17% of total net GHG emissions and has declined from 114 $MtCO_2e$ in 1990 to 79 $MtCO_2e$ in 2018 (-30%). As of 2019, emissions in the agricultural sector accounted for 10% of total net GHG emissions and has declined from 54 $MtCO_2e$ in 1990 to 46 $MtCO_2e$ in 2018 (-16%). As of 2019, emissions in the industrial processes sector accounted for 4% of total net direct greenhouse gas emissions and has declined from 60 $MtCO_2e$ in 1990 to 10 $MtCO_2e$ in 2018 (-82%). As of 2019, emissions in the public sector accounted for 2% of total net direct greenhouse gas emissions and has declined from 13 $MtCO_2e$ in 1990 to 8 $MtCO_2e$ in 2018 (-40%). As of 2019, emissions in the residential sector accounted for 15% of total net direct greenhouse gas emissions and has declined from 80 $MtCO_2e$ in 1990 to 70 $MtCO_2e$ in 2018 (-13%). As of 2019, emissions in the transport sector accounted for 27% of total net direct greenhouse gas emissions and has declined from 130 $MtCO_2e$ in 1990 to 126 $MtCO_2e$ in 2018 (-3%). As of 2019, emissions in the waste sector accounted for 4% of total net GHG emissions and has declined from 67 $MtCO_2e$ in 1990 to 21 $MtCO_2e$ in 2018 (-67%). Note that the most recent Devolved Administration inventory covers 1990-2018 and is therefore one year behind the national inventory. Moreover, since the full emissions time series is recalculated on an annual basis, figures for the Devolved Administrations will not be directly comparable to the UK values until the next iteration of the Devolved Administration inventory is published.			

[11] Final UK greenhouse gas emissions national statistics: 1990-2019. Available: https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2019

Climate change	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 change[12]: • 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 1990[13]. • The sea surface temperature around the UK coast for the most recent decade, 2008-2017, is 0.6 °C higher[14] 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. The UKCP18 projects the following changes within the UK by the 2080-2099 decades, relative to a 1981-2000 baseline, with a medium emissions scenario[15]: • 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. 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 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

[12] 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

[13] 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

[14] 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://rmets.onlinelibrary.wiley.com/toc/10970088/2018/38/S2

[15] 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

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	5th	10th	50th	90th	95th	5th	10th	50th	90th	95th	5th	10th	50th	90th	95th
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

	5th	Central	95th
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 EC Birds Directive, 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[16]. 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) [17]. 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) [18]. 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) [19]. 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[20]. SPAs in Northern Ireland are primarily located in coastal and estuarine areas.

[16] Joint Nature Conservation Committee (2013) *Special protection Areas*. Available: http://jncc.defra.gov.uk/page-162.
[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.
[20] 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.			
	Supporting Trend Data: 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). 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 environment[21]. As a result of this, it is likely that further marine SPAs will be designated in the future.			
Biodiversity and Ecosystems: Special Areas of Conservation (SACs)	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 areas[22]. SACs are of national and international conservation importance. The locations of SACs are shown in Figure 1.			
	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[26]. There is also one SAC classified as Northern Ireland / Offshore

[21] Joint Nature Conservation Committee (2013) *Special protection Areas*. Available: http://jncc.defra.gov.uk/page-162.
[22] Joint Nature Conservation Committee (2016) *Special Areas of Conservation (SAC)*. Available: http://jncc.defra.gov.uk/page-23.
[26] 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.

	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)[23]. 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.	(112,770 ha). Additionally, there are two SCIs which are classified as Scotland / Offshore (182,232 ha) [24]. SACs in Scotland are widely and densely distributed throughout the country. Large concentrations are found in coastal and highland areas.	England / Wales / Offshore (584,989 ha) and one classified as Wales / Offshore (1,062,562 ha). [25]. SACs are widely distributed throughout Wales. There are also currently 12 SACs with marine components designated partly or wholly within Welsh waters.	(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.
	Supporting Trend Data: 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			

[23] 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.

[24] 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.

[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.

	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.[27].			
Biodiversity and Ecosystems: Ramsar Sites	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 Directive[28]. Ramsar sites are of national and international conservation importance. The locations of Ramsar sites are shown in Figure 1.			
	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) [29]. Ramsar sites in England are predominantly located in coastal and estuarine areas, however there are smaller sites distributed inland throughout the country.	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) [30]. 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.	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 ha[31]. Ramsar are located in coastal and estuarine areas of Wales, with several situated in the central and northern highlands.	As of May 2018, there were 20 Ramsar sites in Northern Ireland, totalling an area of 88,152 ha[32]. Ramsar sites in Northern Ireland are primarily located in coastal and estuarine areas.

[27] Joint Nature Conservation Committee (2013) *C3. Status of European habitats and species*. Available: http://jncc.defra.gov.uk/page-4239
[28] Joint Nature Conservation Committee (2015) *Ramsar sites in the UK, its Overseas Territories and Crown Dependencies.* Available: http://jncc.defra.gov.uk/page-161.
[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.
[32] Joint Nature Conservation Committee (2015) *UK Ramsar sites.* Available: http://jncc.defra.gov.uk/page-1388.

	Supporting trend data is not available.			
Biodiversity and Ecosystems: National Nature Reserves (NNRs)	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. 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 Amenity 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 organisations[33]. NNRs are of national conservation importance. The locations of NNRs are shown in Figure 1.			
	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 0.32 ha[34]. NNRs are widely distributed throughout England.	There are 43 NNRs in Scotland, totalling an area of 154,250 ha[35]. NNRs within Scotland cover a wide variety of Scotland's habitats and species from pine forest to blanket bog, from seabird colonies to mountain plants. NNRs are distributed throughout Scotland, with	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[36].	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 species, communities and geology[37].

[33] Joint Nature Conservation Committee (2014) *Protected areas designations directory*. Available: http://jncc.defra.gov.uk/page-1527.
[34] Natural England (2021) *National Nature Reserves in England*. Available: https://www.gov.uk/government/collections/national-nature-reserves-in-england.
[35] Scotland's National Nature Reserves (2021) *What are National Nature Reserves?*. Available: https://www.nnr.scot/About
[36] 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
[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.

		larger concentrations within the north of the country.		
	Supporting trend data is not available.			
Biodiversity and Ecosystems Sites of Special Scientific Interest (SSSI) (England, Scotland and Wales) and Areas of Special Scientific Interest (ASSI) (Northern Ireland) NB: The SSSI / ASSI information shown includes sites designated for both biological and	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 2002[38]. SSSIs / ASSIs are of national conservation importance. The locations of SSSIs and ASSIs are shown in Figure 1.			
	There are over 4,000 SSSIs in England, covering about 7% of the country's surface area[39]. Some of these sites correspond with other designations, such as SACs, SPAs and NNRs. SSSIs are widespread throughout the whole of England, and cover	As of August 2020, there were 1,422 SSSIs in Scotland covering about 13% of the country's surface area[40]. Some of these sites correspond with other designations, such as SACs, SPAs and NNRs. SSSIs are widespread throughout the	There are more than 1,000 SSSIs in Wales, covering about 12% of the country's surface area[41]. Some of these sites correspond with other designations, such as SACs, SPAs and NNRs. SSSIs are widespread throughout the whole of	There are 394 ASSIs in Northern Ireland[42]. ASSIs are widespread throughout the whole of Northern Ireland, and cover a wide variety of habitats and geological features.

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

geological reasons.	a wide variety of habitats and geological features.	whole of Scotland, and cover a wide variety of habitats and geological features.	Wales, and cover a wide variety of habitats and geological features. (NRW 2016)	
	Supporting Trend Data: 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 condition[43].			
Biodiversity and Ecosystems: Marine Conservation Zones (MCZs)	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 waters[44]. 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]. MCZs are of national conservation importance. 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.	There are five MCZs in Northern Irish waters[48]: • Strangford Lough • Carlingford Lough (NB this area is adjacent to the border with the Republic of Ireland) • Outer Belfast Lough • Waterfoot

[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
[46] Joint Nature Conservation Committee (2019) *Marine Conservation Zones.* Available: https://jncc.gov.uk/our-work/marine-conservation-zones/
[48] Joint Nature Conservation Committee (2016) *Marine Protected Areas UK.* Available: http://jncc.defra.gov.uk/page-5201.

			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, informed by the 2016 Welsh MPA network assessment.	• Rathlin
	Supporting trend data is not available.			
Biodiversity and Ecosystems: Nature Conservation Marine	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.			

[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

[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)/

Protected Areas (NCMPAs)	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.
	Supporting trend data is not available.			
Biodiversity and Ecosystems: Ancient Woodland	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. 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 trees[51]. In Northern Ireland, four classifications of Ancient Woodland exist: Ancient Woodland; Probably Ancient Woodland; Possibly Ancient Woodland, and; Long Established Woodland[52]. Ancient Woodland is irreplaceable and is of national conservation importance; however it does not have statutory protection in its own right. The location of Ancient Woodland sites are shown in Figure 1 (England and Scotland). *NB: No mapping data is available for Wales and Northern Ireland.*			

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

[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/

	The Ancient Woodland Inventory for England identifies over 52,000 ancient woodland sites in England[53]. Ancient Woodland sites are scattered throughout England, with the densest concentrations being in the south east[54].	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 as nature reserves or SSSIs[55].	The Ancient Woodland Inventory 2011 indicates that there are around 95,000ha of Ancient Woodland in Wales[56].	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.
	Supporting Trend Data: 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.			
Biodiversity and Ecosystems	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 Reserves[58].			

[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

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

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

[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/

<table>
<tr><td>Biosphere Reserves</td><td colspan="4">Biosphere Reserves are comprised of three interrelated zones:
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).
Biosphere Reserves are non-statutory.
The locations of Biosphere Reserves are shown in Figure 1.</td></tr>
<tr><td></td><td>There are two Biosphere Reserves in England.
Brighton and Lewes Downs:
The Brighton and Lewes Downs Biosphere reserve covers almost 400km^2 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.
Brighton and Lewes Downs Biosphere 2017[59]
North Devon:
The North Devon Biosphere Reserve covers 3,300km^2 of land and sea. The reserve extends from the catchments of the Rivers Taw and</td><td>There are two Biosphere Reserves in Scotland.
Galloway and Southern Ayrshire:
Covering 5268km^2 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.
Wester Ross:
The newly designated area of Wester Ross extends from the tip of Knoydart northwards to Achiltibuie and</td><td>There is one Biosphere Reserve in Wales, Biosffer Dyfi.
The area around the river Dyfi (west Wales) is a special 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 surroundings[62].</td><td>There are no Biosphere Reserves in Northern Ireland.</td></tr>
</table>

[59] Brighton and Lewes Downs Biosphere (2017) *Brighton and Lewes Downs Biosphere.* Available: http://biospherehere.org.uk/
[62] UNESCO (2017) *Biosphere Reserves.* Available: http://www.unesco.org.uk/designation/biosphere-reserves/

	Torridge and out to the island of Lundy, with its core at Braunton Burrows sand dune system[60].	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 education[61].		
	Supporting trend data is not available			
Biodiversity and Ecosystems Biodiversity	**Supporting Trend Data:** 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 1975[63]. The population of breeding seabirds is also in long-term decline, being 28% lower in 2018 than in 1986[64]. Between 1970 and 2018, 63% of UK Biodiversity Action Plan (BAP) Priority Species had declined, with only 21% increasing[65]. 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 favorable conservation status, decreasing to 3% in 2013, before increasing again to 8% in 2019. The number of habitats classified as unfavorable improving decreased to 31% in 2013 and 20% in 2019 from 48% in 2007[66]. Improvement was seen in the number of habitats assessed as unfavorable declining, with a 7% decrease between 2007 and 2019. 48% of UK habitats of European importance are assessed as being unfavorable stable[67].			

[60] North Devon Biosphere (2016) *Welcome to North Devon's UNESCO Bioshere Reserve.* Available: http://www.northdevonbiosphere.org.uk/maps.html
[61] UNESCO (2017) *Biosphere Reserves.* Available: http://www.unesco.org.uk/designation/biosphere-reserves/
[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 habtats and species.
[67] Joint Nature Conservation Committee (2020) C3. Status of European habtats and species.

	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 1992[68]. 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 pollution[69]. Increasingly, biodiversity is under pressure from development and increasing population, in addition to climate change. Overall climate change could lead to: • 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 storminess[70]. 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:

[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.*
[71] https://naturalresources.wales/media/681127/chapter-3-state-and-trends-final-for-publication.pdf

	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

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.

Sustainability Topic / Baseline	England	Scotland	Wales	Northern Ireland

<table>
<tr><td rowspan="3">Communities – Population, Employment, and Viability:
Population</td><td colspan="4">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[72].</td></tr>
<tr><td>The population of England in June 2019 was 56,287,000 which accounts for 84% of the UK's population[73].</td><td>The population of Scotland in June 2019 was 5,463,000 which accounts for 8% of the UK's population[74].</td><td>The population of Wales in June 2019 was 3,153,000 which accounts for 5% of the UK's population[75].</td><td>The population of Northern Ireland in June 2019 was 1,894,000 which accounts for 3% of the UK's population[76].</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>Communities – Population,</td><td colspan="4">The densest areas of population within the UK are within towns and cities.
The locations of urban areas are shown in Figure 2.</td></tr>
</table>

[72] 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

[73] 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

[74] 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

[75] 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

[76] 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: 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)
	Supporting trend data is not available.			
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[77].			

[77] 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 June 2019, in England, the estimated percentage of the population in each age group was[78]: 0-14: 18.1% (an increase of 0.4% since the 2011 census) 15-64: 63.5% (a decrease of 2.5% since the 2011 census) 65+: 18.4% (an increase of 2.1% since the 2011 census)	In June 2019, in Scotland, the estimated percentage of the population in each age group was[79]: 0-14: 15.9% (a decrease of 0.2% since the 2011 census) 15-64: 65% (a decrease of 2.1% since the 2011 census) 65+: 19.1% (an increase of 2.3% since the 2011 census)	In June 2019, in Wales, the estimated percentage of the population in each age group was[80]: 0-14: 16.8% (a decrease of 0.1% since the 2011 census) 15-64: 62.2% (a decrease of 2.5% since the 2011 census) 65+: 21% (an increase of 2.6% since the 2011 census)	In June 2019, in Northern Ireland, the estimated percentage of the population in each age group was[81]: 0-14: 19.7% (an increase of 0.1% since the 2011 census) 15-64: 63.7% (a decrease of 2.1% since the 2011 census) 65+: 16.6% (an increase of 2% since the 2011 census)
	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			

[78] 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

[79] 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

[80] 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

[81] 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

<table>
<tr><td></td><td colspan="4">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[82].</td></tr>
<tr><td rowspan="3">Communities – Population, Employment, and Viability:
Unemployment</td><td colspan="4">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[83].</td></tr>
<tr><td>As of March 2020, the unemployment rate in England was 4%[84].</td><td>As of March 2020, the unemployment rate in Scotland was 4.7%[85].</td><td>As of November 2016, the unemployment rate in Wales was 3.1%[86].</td><td>As of November 2016, the unemployment rate in Northern Ireland was 2.3%[87].</td></tr>
<tr><td colspan="4">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.</td></tr>
</table>

[82] 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

[83] Office for National Statistics (2020) *A guide to labour market statistics.* Available: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/methodologies/aguidetolabourmarketstatistics#unemployment

[84] Office for National Statistics (2021) *LFS: ILO unemployment rate: England: All: %: SA.* Available: https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ycnl/lms

[85] Office for National Statistics (2021) *LFS: ILO unemployment rate: Scotland: All: %: SA.* Available: https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ycnn/lms

[86] Office for National Statistics (2021) *LFS: ILO unemployment rate: Wales: All: %: SA.* Available: https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/ycnm/lms

[87] Office for National Statistics (2021) *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	This is a measure of people, who are economically active, expressed as a percentage of all people (aged 16-64).			
	As of March 2020, the economic activity rate in England was 79.8%[88].	As of March 2020, the economic activity rate in Scotland was 77.5%[89].	As of March 2020, the economic activity rate in Wales was 76.4%[90].	As of March 2020, the economic activity rate in Northern Ireland was 72.9%[91].
	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	The larger cites 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	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	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

[88] Office for National Statistics (2021) *LFS: Economic activity rate: England: Aged 16-64: All: %: SA.* Available: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/lf3l/lms

[89] Office for National Statistics (2021) *LFS: Economic activity rate: Scotland: Aged 16-64: All: %: SA.* Available: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/lf3n/lms

[90] Office for National Statistics (2021) *LFS: Economic activity rate: Wales: Aged 16-64: All: %: SA.* Available: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/lf3m/lms

[91] Office for National Statistics (2021) *LFS: Economic activity rate: Northern Ireland: Aged 16-64: All: %: SA.* Available: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/lf5y/lms

	and coastal areas are less well served by rail. (GIS mapping)	fewer major urban centers being located in these areas. (GIS mapping)	comparatively poorly severed by rail. (GIS mapping)	regions are poorly served by rail. (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[92]: • 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[93]: • Edinburgh • Glasgow • Aberdeen • Inverness • Prestwick	The only major airport in Wales is Cardiff[94].	Major Airports in Northern Ireland are[95]: • Belfast International • Belfast City (George Best)
	Supporting Trend Data:			

[92] 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/

[93] 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/

[94] 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/

[95] 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/

<table>
<tr><td></td><td colspan="4">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.</td></tr>
<tr><td rowspan="2">Communities – Supporting Infrastructure:
Location of Ports</td><td colspan="4">The locations of principal ports (handling +2m tonnes of freight per year) are shown in Figure 2.</td></tr>
<tr><td>Principal ports in England[96]:
Tyne
Tees and Hartlepool
Hull
Grimsby and Immingham
Rivers Hull and Humber
Ipswich
Felixstowe
Harwich
Medway
Dover
London
Portsmouth
Southampton
Plymouth
Bristol
Liverpool</td><td>Principal ports in Scotland[97]:
Forth
Clyde
Glensanda
Aberdeen
Cairnryan
Loch Ryan
Orkney
Sullom Voe</td><td>Principal ports in Wales are[98]:
Milford Haven
Port Talbot
Holyhead
Newport</td><td>Principal ports in Northern Ireland are[99]:
Belfast
Larne
Warrenpoint</td></tr>
</table>

[96] 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

[97] 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

[98] 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

[99] 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

	• 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: • 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[100].			
	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[104].

[100] Environment Agency (2020) *Monitoring radioactivity*. Available: https://www.gov.uk/guidance/monitoring-radioactivity
[104] UK Government (2020) *Radioactivity in Food and the Environment, 2019.* Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932885/Radioactivity_in_food_and_the_environment_2019_RIFE_25.pdf

	2015. The highest doses of radiation received by the public in England were near Sellafield in the north west (0.24 mSv), Capenhurst in the north-west (0.17 mSv), Springfields in the north-west (0.14 mSv) and Amersham in the south-east (0.14 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 Sellafield[101].	2015. The highest doses of radiation received by the public in Scotland were on the Dumfries and Galloway coast in the south west (0.031 mSv). This was found within consumers of fish, shellfish and wildfowl, and is attributed to discharges from the Sellafield site located in England[102].	2015. The highest doses of radiation received by the public in Wales was in Trawsfynydd in the north west (0.016 mSv). This was found in consumers of locally grown food and the site is currently being decommissioned[103].	
	Supporting Trend Data: During 2019, 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.			

[101] UK Government (2020) *Radioactivity in Food and the Environment, 2019.* Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932885/Radioactivity_in_food_and_the_environment_2019_RIFE_25.pdf

[102] UK Government (2020) *Radioactivity in Food and the Environment, 2019.* Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932885/Radioactivity_in_food_and_the_environment_2019_RIFE_25.pdf

[103] UK Government (2020) *Radioactivity in Food and the Environment, 2019.* Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932885/Radioactivity_in_food_and_the_environment_2019_RIFE_25.pdf

	Public Health England (PHE) has provided advice that the overall health risks for beach users from radioactive objects on 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[105].
Health and Well-Being: The Measuring National Well-being programme	The Measuring National Well-being (MNW) programme set out to establish measures to understand and monitor national well-being[106]. The latest data was released in In March 2019. It is worth noting that different groups or different areas of the UK feel differently about their lives and have different experiences, however data that compares different UK geographies has not yet been released. Four measures of personal well-being are examined: how satisfied people feel with their lives; how worthwhile they feel the things they do are; how happy they were yesterday; and how anxious they felt yesterday. Overall, personal well-being levels have increased in the UK. • Mental well-being improved by 4.6 percentage points between 2011 and 2016, compared with the EU-28 average change of 2.2 percentage points. • Feelings of worthwhile increased by 4.1 percentage points between 2011 and 2016 in the UK, compared with the EU-28 average decrease of 0.5 percentage points. • There was little change in ratings of happiness between 2011 and 2016, but the UK remains similar to the EU-28 average of 7.4 out of 10. According to data from the Organisation for Economic Co-operation and Development (OECD), the average (mean) rating of life satisfaction of people aged 15 years and over in the UK was 6.7 out of 10 from 2014 to 2016. According to 2016 data from the European Quality of Life Survey (EQLS), 86% of adults aged 18 years and over in the UK agreed or strongly agreed that they generally felt that what they did in life was worthwhile. This was a 4.1-percentage point increase from 2011, where 82% agreed or strongly agreed. When the EQLS asked adults aged 18 years and over to rate how happy they were, the average happiness rating for the UK was 7.8 out of 10 in 2016. The EQLS also asked adults aged 18 years and over the questions on the World Health Organisation's (WHO-5)'s mental well-being index. This comprises five questions about feeling cheerful, calm, active, rested,

[105] UK Government (2020) *Radioactivity in Food and the Environment, 2019.* Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932885/Radioactivity_in_food_and_the_environment_2019_RIFE_25.pdf

[106] 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

	and interested. A higher percentage score on the index indicates better mental well-being. The UK scored an average of 63.2% on the scale in 2016; an increase from 58.6% in 2011. Loneliness was measured on the European Quality of Life Survey (EQLS) by asking adults aged 18 years and over to rate how often they felt lonely in the past two weeks. In 2016, of respondents in the UK, 5% reported that they felt lonely most or all of the time, compared with 7% in 2011. 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. Detailed studies of the health and well-being of populations surrounding new nuclear sites will need to undertaken at later stages.
Health and Well-Being: The English Index of Multiple Deprivation (IMD) 2019 The Scottish Index of Multiple	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)[107]. 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 housing[108]. 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)[109]. 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)[110].

[107] 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

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

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

[110] 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

Deprivation (SIMD) 2020 The Welsh Index of Multiple Deprivation (WIMD) 2019 Northern Ireland Multiple Deprivation Measure (NIMDM) 2017	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 that 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.	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 Stornoway and the Orkneys are comparatively deprived to the majority of Scotland.	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.	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.
	Supporting Trend Data: 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. 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. 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.			

<table>
<tr><td></td><td colspan="4">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.

Since 2005 there has been little change in the areas of worst deprivation within Northern Ireland.</td></tr>
<tr><td rowspan="2">Historic Environment:

World Heritage Sites</td><td colspan="4">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 measures[111].

The location of World Heritage Sites are shown in Figure 3.</td></tr>
<tr><td>There are 19 World Heritage Sites in England[112]:
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</td><td>There are five World Heritage Sites in Scotland[113]:
Heart of Neolithic Orkney
New Lanark
Old and New Towns of Edinburgh
St. Kilda
The Forth Bridge</td><td>There are three World Heritage Sites in Wales[114]:
Blaenavon Industrial Landscape
Castles and Town Walls of King Edward in Gwynedd
Pontcysyllte Aqueduct and Canal</td><td>There is one World Heritage Site in Northern Ireland[115]:
Giant's Causeway and Causeway Coast</td></tr>
</table>

[111] UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: http://whc.unesco.org/en/statesparties/gb
[112] UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: http://whc.unesco.org/en/statesparties/gb
[113] UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: http://whc.unesco.org/en/statesparties/gb
[114] UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: http://whc.unesco.org/en/statesparties/gb
[115] UNESCO (2021) *World Heritage Convention - United Kingdom of Great Britain and Northern Ireland*. Available: http://whc.unesco.org/en/statesparties/gb

	• 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			
	Supporting Trend Data: 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 List[116].			

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

<table>
<tr><td rowspan="3">Historic Environment
Scheduled Monuments</td><td colspan="4">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.

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 importance[117].

The locations of Scheduled Monuments are shown in Figure 3 (England and Scotland).

NB: No mapping data is available for Wales or Northern Ireland.</td></tr>
<tr><td>As of 2021, there are almost 20,000 Scheduled Monuments located throughout England[118].</td><td>As of 2021, there are approximately 8,000 Scheduled Monuments located throughout Scotland[119].</td><td>As of 2021, there are over 4,000 Scheduled monuments located throughout Wales[120].</td><td>As of 2021, there are 1,901 Scheduled Monuments located throughout Northern Ireland[121].</td></tr>
<tr><td colspan="4">Supporting Trend Data:

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.</td></tr>
</table>

[117] 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
[118] Historic England (2021) *Scheduled Monuments.* Available: https://www.historicengland.org.uk/listing/what-is-designation/scheduled-monuments/
[119] Historic Environment Scotland (2020) *Designations 2020 Onwards*. Available: https://www.historicenvironment.scot/archives-and-research/publications/publication/?publicationId=e8d84fb0-7b16-49cc-a87a-abce00884e10
[120] Lle (2021) *Scheduled Monuments.* Available: http://lle.gov.wales/catalogue/item/ScheduledAncientMonumentsInWales?lang=en
[121] Department for Communities (2021) *Historic Monuments.* Available: https://www.communities-ni.gov.uk/articles/scheduled-monuments

Historic Environment: Listed Buildings and Conservation Areas	Conservation Areas are designated for their special architectural and historic interested and were first designated in 1967 with now around 10,000 in England[122], over 600 in Scotland[123], approximately 60 in Northern Ireland[124] and over 500 in Wales[125]. There are many different types including: • 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 Most Conservation Areas are designated by the local planning authority and as such are best identified on a local basis. 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 listing[126]. There are three categories of listed building: • 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.

[122] Historic England (2021) *What is a Conservation Area?.* Available: https://historicengland.org.uk/listing/what-is-designation/local/conservation-areas/
[123] 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/
[124] nidirect (2021) *Conservation areas and advice*. Available: https://www.nidirect.gov.uk/articles/conservation-areas-and-advice
[125] Welsh Government (2021) *Conservation Areas*. Available: https://cadw.gov.wales/advice-support/placemaking/legislation-and-guidance/conservation-areas
[126] Historic England (2021) *Listed Buildings.* Available: https://historicengland.org.uk/listing/what-is-designation/listed-buildings/

<table>
<tr><td></td><td colspan="4">As noted by Historic England, the total number of listed buildings is unknown, but is estimated to be around 400,000 in England[127]. There are over 30,000 in Wales[128], about 47,000 in Scotland[129] and over 8,900 in Northern Ireland[130]. Due to the numbers, listed buildings are best identified on a local basis.</td></tr>
<tr><td rowspan="3">Historic Environment:
Historic Battlefields</td><td colspan="4">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.</td></tr>
<tr><td>As of 2021, there are 46 Registered Battlefields within England[131].</td><td>As of 2021, there are 42 sites on the Inventory of Historic Battlefields[132].</td><td>As of 2021, there are over 700 sites on the Inventory of Historic Battlefields in Wales[133].</td><td>There is no formal register of historic battlefields in Northern Ireland.</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>Historic Environment:</td><td colspan="4">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.</td></tr>
</table>

[127] 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,listed%20buildings%20are%20Grade%20I

[128] Lle (2021) *Listed Buildings*. Available: https://lle.gov.wales/catalogue/item/ListedBuildings/?lang=en

[129] 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

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

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

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

[133] Cadw (2016) *Historic Battlefields.* Available: http://cadw.gov.wales/historicenvironment/protection/battlefields/?lang=en

<table>
<tr><td rowspan="3">Parks and Gardens</td><td colspan="4">Historic Environment Scotland maintains the Inventory of Gardens and Designed Landscapes which identifies historic grounds and designed landscapes intentionally laid out for artistic effect.
In Wales, Cadw maintains the Register of Parks and Gardens of Special Historic Interest.
In Northern Ireland, the Department for Communities maintains the Register of Historic Parks, Gardens and Demesnes.
Locations of Parks and Gardens are shown in Figure 3 (England and Scotland).
NB: No mapping data is available for Wales or Northern Ireland.</td></tr>
<tr><td>As of 2021, there are over 1,600 Registered Historic Parks and Gardens within England[134].</td><td>As of 2021, there are over 300 sites on the Inventory of Gardens and Designed Landscapes within Scotland[135].</td><td>As of 2021, there are approximately 400 sites on the Register of Parks and Gardens of Special Historic Interest in Wales[136].</td><td>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[137].</td></tr>
<tr><td colspan="4">Supporting trend data is not available.</td></tr>
<tr><td>Historic Environment:</td><td colspan="4">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</td></tr>
</table>

[134] Historic England (2021) *Registered Parks & Gardens.* Available: https://www.historicengland.org.uk/listing/what-is-designation/registered-parks-and-gardens/
[135] 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/
[136] 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
[137] Department for Communities (2021) *Historic Parks, Gardens and Demesnes*. Available: https://www.communities-ni.gov.uk/articles/historic-parks-gardens-and-demesnes

<table>
<tr><td>Historic Landscape Characterisation</td><td colspan="4">heritage assets as it brigades understanding of the whole landscape and townscape into repeating HLC Types[138]. HLCs are typically held by the relevant local Historic Environment Record in England[139].</td></tr>
<tr><td>Historic Environment:
Areas of Archaeological Importance</td><td colspan="4">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[140].</td></tr>
<tr><td rowspan="2">Historic Environment:
Protected Wrecks</td><td colspan="4">The Protection of Wrecks Act (1973) 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 importance[141].
Locations of Protected Wrecks are shown in Figure 3 (England).
NB: No mapping data is available for Scotland, Wales or Northern Ireland.</td></tr>
<tr><td>There are 53 Protected Wreck sites in English waters as of 2017. The majority of these are located along the south coast[142].</td><td>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[143].</td><td>There are 18 Designated Wreck sites in Scottish waters. These are primarily located on coastal areas in the north-west[144].</td><td>There is 1 Protected Wreck in Northern Irish waters, La Girona, which is located on the North Antrim coast[145].</td></tr>
</table>

[138] Historic England (2021) *Historic Landscape Characterisation.* Available: https://historicengland.org.uk/research/methods/characterisation/historic-landscape-characterisation/#Section4Text
[139] Archaeology Data Service (2018) Historic Landscape Characterisation Available: https://archaeologydataservice.ac.uk/archives/view/HLC/index.cfm
[140] Historic England (2021) *Areas of Archaeological Importance*. Available:https://historicengland.org.uk/advice/hpg/has/archaeologicalimportance/
[141] Historic England (2021) *Protected Wreck Sites.* Available: https://www.historicengland.org.uk/advice/planning/consents/protected-wreck-sites/
[142] Historic England (2021) *Protected Wreck Sites.* Available: https://www.historicengland.org.uk/advice/planning/consents/protected-wreck-sites/
[143] Cadw (2021) *Marine historic environment*. Available: https://cadw.gov.wales/advice-support/placemaking/legislation-and-guidance/marine-historic-environment
[144] Marine Scotland Information (2021) *Wrecks (HES)*. Available: https://marinescotland.atkinsgeospatial.com/nmpi/default.aspx?layers=628
[145] Department for Communities (2021) *Shipwrecks*. Available: https://www.communities-ni.gov.uk/articles/shipwrecks-0

	Supporting trend data is not available.			
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[146].			
Landscape: National Parks	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. 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). 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.[147] 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. Locations of National Parks within England, Scotland and Wales are shown in Figure 4.			

[146] Historic England (2021) *Heritage at Risk Register*. Available: https://historicengland.org.uk/advice/heritage-at-risk/search-register/
[147] NatureScot (2021) *National Park.* Available: https://www.nature.scot/professional-advice/protected-areas-and-species/protected-areas/national-designations/national-park

	There are 10 National Parks in England[148]: • Broads • Dartmoor • Exmoor • Lake District • New Forest • Northumberland • North York Moors • Peak District • South Downs • Yorkshire Dales	There are two National Parks in Scotland[149]: • Cairngorms • Loch Lomond and the Trossachs	There are three National Parks in wales[150]: • Brecon Beacons • Pembrokeshire Coast • Snowdonia	There are currently no National Parks within Northern Ireland.
	Supporting Trend Data: 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 Mountains[151].			
Landscape: Areas of Outstanding Natural Beauty (AONBs) and National Scenic Areas	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. 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 AONBs[152].			

[148] National Parks UK (2021) *Your National Parks*. Available: https://www.nationalparks.uk/parks/
[149] National Parks UK (2021) *Your National Parks*. Available: https://www.nationalparks.uk/parks/
[150] National Parks UK (2021) *Your National Parks*. Available: https://www.nationalparks.uk/parks/
[151] 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
[152] 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

	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) 1985[153]. 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) [154]. NSAs are broadly equivalent to the AONBs found in England, Wales and Northern Ireland. Locations of AONBs and NSAs are in Figure 4.			
	There are 34 AONBs located within England[155]: NB: the Wye Valley is on the England / Wales border. • Arnside & Silverdale • Blackdown Hills • Cannock Chase • Chichester Harbour • Chilterns • Cornwall • Cotswolds • Cranborne Chase and West Wiltshire Downs • Dedham Vale • Dorset	There are 40 National Scenic Areas within Scotland[156]: • 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	There are four AONBs within Wales[157]: • Clwydian Range and Dee Valley • Gower • Llyn • Anglesey	There are eight AONBs within Northern Ireland[158]: • Antrim Coast and Glens • Causeway Coast • Lagan Valley • Mourne • Binevenagh • Ring of Gullion • Sperrin • Strangford Lough

[153] 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

[154] 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

[155] The National Association of Areas of Outstanding Natural Beauty (2017) *Areas of Outstanding Natural Beauty*. Available: http://www.landscapesforlife.org.uk/

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

[157] The National Association of Areas of Outstanding Natural Beauty (2017) *Areas of Outstanding Natural Beauty*. Available: http://www.landscapesforlife.org.uk/

[158] The National Association of Areas of Outstanding Natural Beauty (2017) *Areas of Outstanding Natural Beauty*. Available: http://www.landscapesforlife.org.uk/

	• East Devon • Forest of Bowland • Howardian Hills • High Weald • Isle of Wight • Isles of Scilly • Kent Downs • Lincolnshire Wolds • Malvern Hills • Mendip Hills • Norfolk Coast • North Devon • North Pennines • North Wessex Downs • Nidderdale • Northumberland Coast • Quantock Hills • Shropshire Hills • Solway Coast • South Devon • Suffolk Coast and Heaths • Surrey Hills • Tamar Valley • Wye Valley (England and Wales)	• 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 • 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		

<table>
<tr><td></td><td colspan="4">Supporting trend data is not available.</td></tr>
<tr><td rowspan="2">Landscape:
Heritage Coasts (England and Wales)</td><td colspan="4">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 coastlines[159].

The locations of Heritage Coasts are shown in Figure 4.</td></tr>
<tr><td>There are 32 Heritage Coasts located around England[160]:
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)</td><td>There are no areas of Heritage Coast in Scotland.</td><td>There are 14 Heritage Coasts located around Wales[161]:
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</td><td>There are no areas of Heritage Coast in Northern Ireland.</td></tr>
</table>

[159] 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

[160] 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

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

	• Rame Head • Lundy • Gribbin Head • Exmoor • The Roseland • St Bees Head • The Lizard • Northumberland • Penwith • North Devon • Godrevy – Portreath • South Foreland • St Agnes • Dover-Folkestone • Trevose 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 Natural Character Area Profiles (NCAs)[162] which divide England into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity,	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	Natural Resources Wales uses the LANDMAP tool to evaluate landscape characteristics. This includes geological landscape, landscape habitats, visual and sensory, historic landscape and cultural	The Northern Ireland Landscape Character Assessment subdivides the countryside into 130 Landscape Character Areas, each based upon local patterns of geology, landform,

[162] 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

	history, and cultural and economic activity. Their boundaries follow natural lines in the landscape rather than administrative boundaries. They can be used for planning and development.	and decision making on proposed developments[163].	landscape[164]. Although no specific defined Landscape Character Areas are identified, LANDMAP is used to inform planning, policy and strategies.	land use, cultural and ecological features[165].
	Supporting trend data is not available.			
Air Quality: Location of Air Quality Management Areas (AQMAs)	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. AQMAs are typically associated with vehicle emissions, principally oxides of nitrogen (NOx), oxides of sulphur (SO_2) and particulates (PM10). As such, AQMAs are predominantly associated with urban areas and the road network[166]). The locations of AQMAs are shown in Figure 5.			
	As of February 2021, there were 526 AQMAs in England[167]. AQMAs are distributed throughout	As of February 2021, there were 41 AQMAs in Scotland[168]. The majority of these are located in the south	As of February 2021, there were 44 AQMAs in Wales[169]. These are all located in the south of the country. The	As of February 2021, there were 19 AQMAs in Northern Ireland[170]. These are located in the east, west south and

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

[164] 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

[165] 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

[166] Department for Environment and Rural Affairs (2016) *Current AQMAs by Source.* Available: https://uk-air.defra.gov.uk/aqma/summary

[167] Department for Environment and Rural Affairs (2016) *AQMAs interactive map and AQMA Summary Data*. Available: https://uk-air.defra.gov.uk/aqma/maps

[168] Scottish Air Quality (2021) *Air Quality Management Areas. Available*: http://www.scottishairquality.scot/laqm/aqma

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

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

	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.	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.	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.	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. 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.
	Supporting Trend Data: 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 regulations[171].			

[171] 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	*Geological SSSIs / ASSIs are included within the SSSI / ASSI information provided in Biodiversity and Ecology.*
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[172]. Across the United Kingdom, land is legally defined as 'contaminated land' where substances are causing or could cause[173]: • Significant harm to people, property or protected species • Significant pollution of surface waters or groundwater • Harm to people as a result of radioactivity Some types of contaminated land are classed as 'special sites'. This includes land that: • 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 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

[172] 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
[173] UK Government (2021) *Contaminated Land.* Available: https://www.gov.uk/contaminated-land

<table>
<tr><td></td><td colspan="4">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.

Local authorities maintain the Public Registers for the ordinary contaminated land in their area.</td></tr>
<tr><td rowspan="3">Soils, Geology, and Land Use:

Geoparks</td><td colspan="4">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-tourism[174].

NB: No mapping data on Geoparks is available.</td></tr>
<tr><td>There are currently three Geoparks in England, the English Riviera, located in the south of Devon in the south west, the North Pennines, between Cumbia and Northumberland in the north, and the Black Country located in the Midlands[175].</td><td>There are currently two Geoparks in Scotland, the North West Highlands, located in the north, and Geopark Shetland, within the Shetland Islands[176].</td><td>There are currently two Geoparks Wales, Fforest Fawr, located in the Brecon Beacons in the south, and GeoMon, which encompasses the island of Anglesey in the north west[177].</td><td>There is currently one Geopark in Northern Ireland, Marble Arch Caves, in the south west of the country[178].</td></tr>
<tr><td colspan="4">Supporting trend data is not available.</td></tr>
<tr><td>Water Quality and Resources:</td><td colspan="4">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.

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</td></tr>
</table>

[174] United Kingdom National Commission for UNESCO (2021) *Global Geoparks.* Available: http://www.unesco.org.uk/designation/geoparks/
[175] United Kingdom National Commission for UNESCO (2021) *Global Geoparks.* Available: http://www.unesco.org.uk/designation/geoparks/
[176] United Kingdom National Commission for UNESCO (2021) *Global Geoparks.* Available: http://www.unesco.org.uk/designation/geoparks/
[177] United Kingdom National Commission for UNESCO (2021) *Global Geoparks.* Available: http://www.unesco.org.uk/designation/geoparks/
[178] Marble Arch Caves Global Geopark (2021) *Our Geopark.* Available: http://www.marblearchcavesgeopark.com/our-global-geopark/

<table>
<tr><td rowspan="2">Water Framework Directive (WFD)</td><td colspan="4">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.

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.

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 2010[179]).

Note will also be made in the AoS of each site of the terms of the Environmental Permitting Regulations (England and Wales) 2018.</td></tr>
<tr><td>As of 2019, in England, the quality status of water bodies assessed under the WFD were[180]:

Lakes:

High – 0%
Good – 16%
Moderate – 71%
Poor – 11%
Bad – 1%

Rivers and Canals:

High – 0%</td><td>As of 2019, in Scotland, the quality status of water bodies assessed under the WFD were[182]:

Lakes:

High – 31%
Good – 38%
Moderate – 20%
Poor – 10%
Bad – 1%

Rivers and Canals:

High – 7%</td><td>As of 2019, in Wales, the quality status of water bodies assessed under the WFD were[184]:

Lakes:

High – 1%
Good – 19%
Moderate – 67%
Poor – 13%
Bad – 0%

Rivers and Canals:</td><td>As of 2019, in Northern Ireland, the quality status of water bodies assessed under the WFD were[186]:

Lakes:

High – 0%
Good – 24%
Moderate – 29%
Poor – 33%
Bad – 14%

Rivers and Canals:

High – 0%</td></tr>
</table>

[179] 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
[180] Joint Nature Conservation Committee (2020) B7. Surface Water Status. Available: http://jncc.defra.gov.uk/page-4250
[182] Joint Nature Conservation Committee (2020) B7. Surface Water Status. Available: http://jncc.defra.gov.uk/page-4250
[184] Joint Nature Conservation Committee (2020) B7. Surface Water Status. Available: http://jncc.defra.gov.uk/page-4250
[186] Joint Nature Conservation Committee (2020) B7. Surface Water Status. Available: http://jncc.defra.gov.uk/page-4250

	Good – 15% Moderate – 62% Poor – 19% Bad – 3% Estuaries and Coastal: High – 1% Good – 28% Moderate – 65% Poor – 2% Bad – 4% As of 2015, in England, the quality status of groundwater bodies assessed under the WFD were[181]: Quantitative Status: Good - 69% Poor – 31% Chemical Status: Good – 53% Poor – 47%	Good – 48% Moderate – 24% Poor – 16% Bad – 5% Estuaries and Coastal: High – 30% Good – 68% Moderate – 1% Poor – 0% Bad – 0% As of 2015, in Scotland Ireland, the quality status of groundwater bodies assessed under the WFD were[183]: Overall Status: Good - 83% Poor – 17%	High – 0% Good – 44% Moderate – 47% Poor – 8% Bad – 1% Estuaries and Coastal: High – 2% Good – 22% Moderate – 75% Poor – 2% Bad – 0% As of 2015, in Wales, the quality status of groundwater bodies assessed under the WFD were[185]: Quantitative Status: Good - 100% Poor – 0% Chemical Status: Good – 58% Poor – 42%	Good – 31% Moderate – 57% Poor – 9% Bad – 2% Estuaries and Coastal: High – 0% Good – 40% Moderate – 56% Poor – 4% Bad – 0% As of 2020, in Northern Ireland, the quality status of groundwater bodies assessed under the WFD were[187]: Overall Status: Good - 63% Poor – 12%
	Supporting Trend Data:			

[181] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/514944/National_evidence_and_data_report.pdf
[183] https://www.sepa.org.uk/data-visualisation/water-classification-hub/
[185] https://cdn.cyfoethnaturiol.cymru/media/676155/progress-report-for-wales-2009-2015-english.pdf?mode=pad&rnd=131596369400000000
[187] https://www.daera-ni.gov.uk/sites/default/files/publications/daera/Northern%20Ireland%20Water%20Framework%20Directive%20Groundwater%20Update%202020.pdf

<table>
<tr><td></td><td colspan="4">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 2013[188].</td></tr>
<tr><td rowspan="2">Water Quality and Resources:
Bathing Water Quality</td><td colspan="4">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 nations 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.

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.</td></tr>
<tr><td>As of 2019, in England, the quality status of bathing water areas assessed under the Bathing Waters Directive were[189]:
Excellent – 300
Good – 92
Sufficient – 21
Poor – 8
Closed - 1</td><td>As of 2019 there were 86 designated bathing waters in Scotland. The quality status of bathing water areas assessed under the Bathing Waters Directive were[190]:
Excellent – 29 (34%)
Good – 31 (35%)
Sufficient – 20 (23%)
Poor – 6 (8%)</td><td>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 were[191]:
Excellent – 83
Good – 17</td><td>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</td></tr>
</table>

[188] Joint Nature Conservation Committee (2019) *Surface Water Status – Datasheet*. Available: http://jncc.defra.gov.uk/docs/UKBI2015_DS_B7_Final2.xlsx
[189] Environment Agency, Bathing Water Data. Available: http://environment.data.gov.uk/bwq/profiles/data.html?country=England
[190] Scottish Environment Protection Agency (2019) *Season 2019: Classifications.* Available: https://www2.sepa.org.uk/bathingwaters/Classifications.aspx
[191] 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

			• Sufficient – 5 All of the designated bathing waters met the minimum water quality standards and there were no non-compliant bathing waters during the 2019 season.	Bathing Waters Directive were[192]: • Excellent – 14 (53.85%) • Good – 9 (34.62%) Sufficient – 3 (11.54%)
	Supporting Trend Data: 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.			
Flood Risk and Coastal Change: Location of Fluvial and Tidal Floodplains	In England and Wales, the flood risk (river and tidal) is categorised into three zones[193] 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)): • 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. The risk of surface water flooding also needs to be considered: • 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.			

[192] Department of Agriculture, Environment and Rural Affairs (2020) *Better beaches report.* Available: https://www.daera-ni.gov.uk/articles/bathing-water-quality
[193] Environment Agency (2013) *Flood Map for Planning*. Available: http://apps.environment-agency.gov.uk/wiyby/37837.aspx

	In Scotland, the flood risk (river, tidal and surface water) is categorised into three areas[194]: • 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. 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)[195]. 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)[196]. Scotland has an estimated 108,000 properties at risk of flooding[197], England has approximately 5.2million at risk[198], 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 floodplain[199]. 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 follows[200]: • SMP 1 – Scottish Border to River Tyne

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

[195] 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

[196] Welsh Government (2019) Properties at Risk of Flooding in Wales. Available: https://statswales.gov.wales/Catalogue/Environment-and-Countryside/Flooding

[197] 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

[198] 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

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

[200] Environment Agency (2009) Shoreline Management Plans (SMPs). Available: https://www.gov.uk/government/publications/shoreline-management-plans-smps

	• SMP 2 – The Tyne to Flamborough Head • SMP 3 – Flamborough Head to Gibraltar Point • SMP 4 – Gibraltor 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 • 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 The Shoreline Management Plans propose four different management policies: • No active intervention • Hold the (existing defence) line • Managed realignment • Advance the line 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 process[201]. Northern Ireland also does not have a strategic approach to shoreline management[202].			
	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 water[203]. 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 rivers[204].	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 100,000 people[205], 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.	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 and the Brecon Beacons, have less risk of flooding[206].	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. 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 density[207].

[201] Dynamic Coasts (2017) National Coastal Change Assessment. Available: http://www.dynamiccoast.com/outputs.html
[202] 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
[203] 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
[204] Environment Agency (2017) *Flood Map for Planning (Rivers and Sea).* Available: http://apps.environment-agency.gov.uk/wiyby/37837.aspx
[205] 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
[206] Natural Resources Wales (2017) *Flood risk map.* Available: https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en
[207] Department for Infrastructure (2020) *Flood Maps NI.* Available: https://www.infrastructure-ni.gov.uk/topics/rivers-and-flooding/flood-maps-ni

	Supporting Trend Data: 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 Ireland[208].
Resources and Raw Materials	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) waste[209]. 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 2018[210]. Total UK commercial and industrial waste, comprising inert, non-hazardous arising which result from trade or businesses, was 41.1 million tonnes in 2017. Around 80% of this total was generated in England. This was split between the commercial and industrial sectors by 27.5 and 13.6 million tonnes respectively[211]. 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

[208] 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

[209] 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

[210] 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

[211] 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

	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[212].

[212] 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. 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	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: • 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	Recommendations for further mitigation of adverse effects are outlined below: • 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.

	• 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	Recommendations for further mitigation of adverse effects are outlined below: • 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	Recommended that EN-1 could suggest that proposals should include development and implementation of a Soil Management Plan. 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.
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	(Chapter 5), that applicants produce and implement a Geodiversity Management Strategy as part of relevant development proposals. In addition, EN-1 could suggest that applicants preserve and enhance access to geological interest features for relevant development proposals.
AoS Objective 11: Improve health and well-being and safety for all citizens and reduce inequalities in health	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. 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.
AoS Objective 12: Promote sustainable transport and minimise detrimental impacts on strategic transport network and disruption to basic services and infrastructure	It is recommended that the text of EN-1 notes the requirement for consideration of disruption to services and infrastructure
AoS Objective 13: To promote a strong economy with opportunities for local people	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'.
AoS Objective 14: Promote sustainable use of resources	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

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 arisings 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.

Appendix F. Baseline Maps

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

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