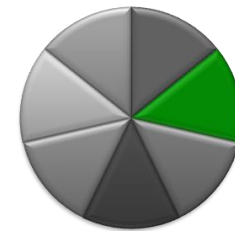


Environmental evidence base: Biodiversity



- Air quality
- **Biodiversity**
- Geodiversity
- Landscape
- Land use
- Soils
- Water

ofgem

- Introduction:
 - A systematic review has been undertaken to characterise the impacts of the GB regulated energy system (primarily transmission and distribution) on the natural environment
 - There are seven issues that are seen to be important to address: Air quality, Biodiversity, Geodiversity, Landscape, Land use, Soils, and Water.
- Purpose of the evidence bases:
 - The intended use of the evidence base is: to inform development of regulatory policy proposals; support internal/external advocacy; and support internal implementation of Ofgem’s strategic and sustainability assessment framework
 - This evidence base describes: the current state of biodiversity in GB, wider pressures on biodiversity in GB, and potential impacts from any pressure on biodiversity, factors leading to such impacts and relevant statutory legislation/regulation
 - The evidence base also gives more detailed consideration of those individual elements of the GB regulated energy system likely to have greatest impact on biodiversity and/or to arise most frequently, and identifies: how the significance of impacts may be affected by climate change, existing statutory legislation/regulation intended to prevent or minimise impacts, and management actions that prevent or minimise impacts and can be undertaken by a range of actors
- How to use:
 1. The environmental evidence bases should be used to identify the impacts associated with the policy/project using the matrix, showing those that are high importance with high/medium confidence and those that are medium importance with high confidence. Then additional analysis is carried out.
 2. Undertake more detailed consideration of the significance of the effects
 3. Now undertake more detailed analysis of the interactions with climate change
 4. Consider potential mitigation options
 5. Undertake additional qualitative and quantitative analysis as required
- Case study:
 - A case study has been included, considering the pressure on biodiversity with the most significant impacts in order to help you use this evidence base

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State of biodiversity

- Article 2 of the Convention on Biological Diversity (CBD, <http://www.cbd.int/>) states that: "biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems".
- A global target to reduce significantly the rate of loss of biodiversity by 2010 was not met. The 10th Conference of the Parties to the CBD agreed a new Strategic Plan for Biodiversity for 2011-20 (<http://www.cbd.int/sp/>), targets include to:
 - at least halve and, where feasible, bring close to zero the rate of loss of natural habitats;
 - establish a conservation target of 17% of terrestrial and inland water areas and 10% of marine and coastal areas;
 - restore at least 15% of degraded areas
- The GB regulated energy system contributes to wider pressures on biodiversity.
- The UK National Ecosystem Assessment (<http://uknea.unep-wcmc.org/>) has identified that:
 - Land use change and pollution are the major drivers of change across species groups
 - Exploitation has a significant impact in marine ecosystems, both on target species, but also on non-target species through wider ecosystem changes
 - There is emerging evidence of climate change impacts across most species groups
 - The impact of non-native invasive species on native biodiversity is considered less important for most species groups.

Potential impacts on biodiversity

- The following slides:
 - Identify and broadly categorise potential impacts arising from any pressure on biodiversity
 - Identify factors that lead to such impacts
 - Highlight relevant statutory legislation or regulation intended to prevent or minimise such impacts
- This information is then used specifically to consider impacts on biodiversity arising from individual elements of the GB regulated energy system.

For more information on roles and responsibilities of regulators for biodiversity, please refer to Annex 1.

For more information on relevant legislation, please refer to Annex 2

Potential impacts on biodiversity

Impact	Factor	Relevant legislation
Habitat area	Loss or gain of priority habitats, including Protected Sites	<ul style="list-style-type: none">• The UK Marine and Coastal Access Act 2009• The Marine (Scotland) Act 2010• The Conservation of Habitats and Species Regulations 2010• The Conservation (Natural Habitats, &c.) Regulations 1994• Wildlife & Countryside Act 1981• The Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention or Wetlands Convention)• The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

Potential impacts on biodiversity

Impact	Factor	Relevant legislation
Disturbance	Factors that cause species to avoid locations (e.g. noise, light, human activity), alter the physical environment (e.g. soil, hydrology) or vegetation (i.e. structure and/or composition)	<ul style="list-style-type: none"> • The EC Habitats Directive • Environmental Impact Assessment (EIA) Directive • Strategic Environmental Assessment (SEA) Directive • The Natural Environment and Rural Communities (NERC) Act (2006) and The Nature Conservation (Scotland) Act 2004
Chemical effects	Release of chemicals that lead to changes in the composition and diversity of species communities, as a result of processes such as: <ul style="list-style-type: none"> – Acidification (deposition of chemicals that make soils and tree bark more acid) – Eutrophication (an increase in nutrients, usually compounds containing nitrogen) – Toxic pollution (chemicals which immediately poison, or accumulate in species) 	<ul style="list-style-type: none"> • The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001

Potential impacts on biodiversity

Impact	Factor	Relevant legislation
Non-native species (inc. pathogens)	Factors aiding their initial colonisation, subsequent establishment and eventual invasion	
Habitat fragmentation / connectivity	<p>Factors that impact on the area, isolation and edges of priority habitats, including:</p> <ul style="list-style-type: none"> – Loss or gain of priority habitats impacting on distance between habitat patches – Changes in the intervening matrix that alter the probability of species dispersing successfully between habitat patches (e.g. by affecting species behaviour, species mortality or acting as a physical barrier) – Damaging or beneficial activities on land adjacent to priority habitats resulting in edge effects that impact on the area of suitable habitat for some species 	<ul style="list-style-type: none"> • The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention or CMS) • The EC Birds Directive
Cumulative effects	Any or all of the above may combine to produce impacts that are more substantial than each of the effects in isolation	<ul style="list-style-type: none"> • The Convention on Biological Diversity

- Case Study:
 - The steps are illustrated using a ‘real life’ case study.
 - This Environmental Evidence Base considers the pressures: new gas transmission lines, electricity transmission lines underground, electricity transmission lines overhead, and new marine interconnection sub-sea stations, and sub-sea lines (electricity) and marine interconnection (gas).
 - Steps 2 to 5 have been applied to this case study. For general use, you will need to tailor these steps to your own policy/project
- Step 1: Initial rankings of impacts
 - This step applies to all policies/projects
 - The matrices illustrate the severity of each pressure on the various impacts and so can be used to highlight areas for additional scrutiny
- Step 2: Significance of rankings
 - In this step you develop a matrix specific to your given policy/project
 - This allows you to consider the significance of the identified impacts
- Step 3: Interactions with climate change
 - Another case-specific matrix is developed here analysing the interaction with climate change
- Step 4: Preventing or minimising the impacts
 - A final case-specific matrix is developed in order to consider potential prevention and mitigation options
- Step 5: Quantitative/qualitative analysis
 - With your policy/project development, you should undertake further analysis of the relevant impacts and mitigation responses

Step 1: Initial ranking of impacts on biodiversity

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- Having identified and broadly categorised potential impacts arising from any pressure on biodiversity, the following tables provide an expert initial ranking of each of the individual elements of the GB regulated energy system:
 - Independent of other energy system-environment interactions
 - At the likely scale of an individual pressure (e.g. an individual transmission line or sub-station)
 - Irrespective of existing statutory legislation and regulation, and
 - Irrespective of potential timing
- Cumulative effects are considered in the same way in relation to each individual element of the GB regulated energy system
- The matrices should be used to ‘flag up’ significant impacts. This will allow you to conduct further investigation on those significant impacts, which have a high degree of confidence in the evidence available.

- Impact is defined as:



High: national, permanent, irreversible

Medium: regional, semi-permanent, difficult to reverse

Low: local, temporary, reversible

- Confidence in evidence of such impacts is defined as:

H
M
L

High: robust evidence, high agreement

Medium: medium evidence, medium agreement

Low: limited evidence, low agreement

Initial ranking of impacts on biodiversity (electricity transmission)

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Driver: Electricity transmission	Impact					
Issue: Biodiversity	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/connectivity	Cumulative effects
Pressures						
New transmission lines – Overhead	H	H	L	H	H	H
New transmission lines – underground	H	H	L	H	H	H
New distribution lines	H	H	L	H	H	H
New/extended substations	H	H	L	H	H	H
New marine interconnection	H	L			L	L
Marine interconnection – land base connection	H	M	L	H	H	
Marine sub-sea lines	H	L			L	L
Marine sub-stations	H	L			L	L
Series compensation installations		M				L
Electricity storage – hydro	M	M	M	M	M	M
Electricity storage – compressed air		L	L			L
Electricity storage – batteries	L	L	L			L
Electricity storage – cryogenic systems						
Smart grids						

Initial ranking of impacts on biodiversity (gas transmission)

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Driver: Gas transmission	Impact					
Issue: Biodiversity	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/ connectivity	Cumulative effects
Pressures						
New gas transmission network	H	H	L	H	H	M
New compressors	H	H	L	H	H	M
New distribution network		H				H
New port infrastructure – gas reception facilities	L	L	L	L	L	
New port infrastructure – LNG import	L	L	L	L	L	
Marine interconnection	H	H				H
Biogas upgrading for injection to grid		L				L
Gas storage – underground storage in caverns or gas and oil fields.						
Gas storage – above ground connection	M	M				M
CCGT – district heating		H				H
Biomethane injection to grid		L				L
Shale gas – connection to grid	H	H	L	H	H	H

Initial ranking of impacts on biodiversity (carbon capture/storage)

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Driver: Carbon capture and storage	Impact					
Issue: Biodiversity	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/ connectivity	Cumulative effects
Pressures						
Redeployment of gas pipelines for CO2		L				L
New CO2 pipelines	H	H	L	H	H	H
CCS process			L			L

Case study – Beauly to Denny power line

The pressures with the most significant impacts, identified in the previous matrix are:

- New gas transmission lines, shale gas connection to the grid and CO2 pipelines
- Electricity transmission lines underground
- Electricity transmission lines overhead
- New marine interconnection sub-sea stations, and sub-sea lines (electricity) and marine interconnection (gas).

These pressures highlighted in this case study are now analysed in the following matrices.

The ongoing upgrade of the overhead line between Beauly and Denny in Scotland involves the replacement of a 132kV overhead transmission line with a 400kV transmission line. The 220km route affects sites of international, national and local importance for nature conservation with the project falling under Schedule 1 of the Environmental Impact Assessment Regulations (Scotland) (2000). This made an assessment mandatory.

The ecological impact assessment and statutory and voluntary consultations informed conditions attached to the planning consent. These are intended to minimise effects on ecology and nature conservation.

Measures relevant to designated sites and protected species have to be agreed with Scottish Natural Heritage. Pollution and siltation prevention measures have to be agreed with the Scottish Environment Protection Agency.



First new pylon completed on the Beauly-Denny power line
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More information can be found in:

The Environmental Statement – ecology and nature conservation
<http://www.scotland.gov.uk/Topics/Business-Industry/Energy/Infrastructure/Energy-Consents/Beauly-Denny-Index/Environmental-Statement/Volume-1/Ch-22>
Consent documents

<http://www.scotland.gov.uk/Resource/Doc/917/0092854.pdf>
<http://www.scotland.gov.uk/Resource/Doc/917/0092855.pdf>

Step 2: Significance of impacts on biodiversity

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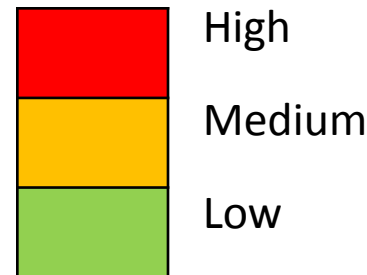
Annex

- Now undertake further analysis, which is illustrated with the case study on the previous slide
- The following tables go on to provide more detailed consideration of the significance of impacts from those individual elements of the GB regulated energy system initially ranked highest and/or that are likely to arise most frequently
- To do this you use a case specific matrix. An example is shown on the next slide.
 - This allows you to see which impacts should be given priority in your analysis
 - In this case, habitat area, disturbance, Non-native species, Habitat fragmentation/ connectivity and cumulative effects are the main impacts to be considered
- Ranking of magnitude is based on extent, duration, reversibility and frequency of impact
- Confidence in the evidence is defined in the same way as for the initial ranking

- A combined ranking of the significance of impacts is based on magnitude x confidence:

Magnitude	High			
	Medium			
	Low			
		Low	Medium	High
		Confidence		

- Significance:



Significance of impacts on biodiversity



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Issue: Biodiversity	Impact					
Pressure: New gas transmission lines, shale gas connection to the grid and CO ₂ pipelines	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/connectivity	Cumulative effects
Positive or negative	-	-	-	-	-	-
Extent	Local	Local	Local	Local	Regional	Regional
Duration	Permanent	Permanent	Temporary	Semi-permanent	Permanent	Permanent
Reversibility	Irreversible	Difficult to reverse	Reversible	Difficult to reverse	Difficult to reverse	Difficult to reverse
Frequency	During construction and operation	During construction and operation	During construction and operation	During construction and operation	During construction and operation	During construction and operation
Magnitude	High	High	Low	Medium	High	Medium
Confidence	High	High	Low	High	High	High
Significance						

Significance of impacts on biodiversity

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Issue: Biodiversity	Impact					
Pressure: Electricity transmission lines underground	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/ connectivity	Cumulative effects
Positive or negative	-	-	-	-	-	-
Extent	Local	Local	Local	Local	Regional	Regional
Duration	Permanent	Permanent	Temporary	Semi-permanent	Permanent	Permanent
Reversibility	Irreversible	Difficult to reverse	Reversible	Difficult to reverse	Difficult to reverse	Difficult to reverse
Frequency	During construction and operation	During construction and operation	During construction and operation	During construction and operation	During construction and operation	During construction and operation
Magnitude	High	High	Low	Medium	High	Medium
Confidence	High	High	Low	High	High	High
Significance						

Significance of impacts on biodiversity

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Issue: Biodiversity	Impact					
Pressure: Electricity transmission lines overhead	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/connectivity	Cumulative effects
Positive or negative	-	-	-	-	-	-
Extent	Local	Local	Local	Local	Regional	Regional
Duration	Semi-permanent	Permanent	Temporary	Semi-permanent	Permanent	Permanent
Reversibility	Irreversible	Difficult to reverse	Reversible	Difficult to reverse	Difficult to reverse	Difficult to reverse
Frequency	During construction and operation	During construction and operation	During construction and operation	During construction and operation	During construction and operation	During construction and operation
Magnitude	Medium	High	Low	Low	Medium	Medium
Confidence	High	High	Low	High	High	High
Significance						

Significance of impacts on biodiversity



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Issue: Biodiversity	Impact					
Pressure: , New marine interconnection sub-sea stations, and sub-sea lines (electricity) and marine interconnection (gas).	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/ connectivity	Cumulative effects
Positive or negative	+/-	-	N/A	N/A	+/-	+/-
Extent	Local	Local	N/A	N/A	Local	Local
Duration	Permanent	Semi-permanent	N/A	N/A	Permanent	Permanent
Reversibility	Difficult to reverse	Difficult to reverse	N/A	N/A	Difficult to reverse	Difficult to reverse
Frequency	During construction and operation	During construction and operation	N/A	N/A	During construction and operation	During construction and operation
Magnitude	Low	Medium	N/A	N/A	Medium	Low
Confidence	High	Low	N/A	N/A	Low	Low
Significance			N/A	N/A		

Step 3: Interactions with climate change

- Having provided more detailed consideration of the significance of impacts from those individual elements of the GB regulated energy system initially ranked highest and/or that are likely to arise most frequently, the evidence base goes on to review their potential interactions with climate change.
- This is done through developing another case-specific matrix
 - This allows you to see how the impacts of your policy/project relate to climate change and whether they are going to be amplified, remain neutral or improve with climate change
 - In the case that is being considered here, it is shown in the matrix on the next slide that climate change is likely to amplify the biodiversity impacts
- The following tables identify how the significance of impacts may change as a result of:
 - Direct impacts of climate change on biodiversity
 - Climate change adaptation actions identified by key energy infrastructure providers under the Climate Change Act 2008 adaptation reporting power

Interactions with climate change

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Issue: Biodiversity		Impact				
	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/ connectivity	Cumulative effects
Pressure: New gas transmission lines, shale gas connection to the grid and CO ₂ pipelines						
Significance						
Climate change	=	>	>	>	>	>
Pressure: Electricity transmission lines underground						
Significance						
Climate change	=	>	>	>	>	>
Pressure: Electricity transmission lines overhead						
Significance						
Climate change	=	>	>	>	>	>
Pressure: New marine interconnection, sub-sea stations, and sub-sea lines (electricity) and marine interconnection (gas)						
Significance			N/A	N/A		
Climate change	>	>	N/A	N/A	>	>

For references go to Annex 3

Step 4: Preventing or minimising the impacts

- Finally, the evidence base considers prevention of impacts from those individual elements of the GB regulated energy system initially ranked highest and/or that are likely to arise most frequently, and whose significance and interactions with climate change have been reviewed
- The following tables identify:
 - Relevant existing legislation or regulation
 - Management actions that prevent or minimise impacts and can be undertaken by a range of actors
- The preventative and mitigative options should be considered in any analysis of your policy/project

Preventing or minimising the impacts

Issue: Biodiversity	Impact					
Pressure: New gas transmission lines, shale gas connection to the grid and CO ₂ pipelines	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/connectivity	Cumulative effects
Significance						
Climate change	=	>	>	>	>	>
Legislation/regulation	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
Management	5	5	5	5	5	5

References

Legislation/regulation

1. The EC Habitats Directive (<http://jncc.defra.gov.uk/page-1374>)
2. The Conservation (Natural Habitats, &c.) Regulations 1994 (<http://www.legislation.gov.uk/uksi/1994/2716/contents/made>)
3. The Conservation of Habitats and Species Regulations 2010 (<http://www.legislation.gov.uk/uksi/2010/490/contents/made>)
4. Wildlife & Countryside Act 1981: (<http://jncc.defra.gov.uk/page-1377>).

Management

5. Institute of Ecology and Environmental Management (2006) Guidelines for Ecological Impact Assessment in Britain and Ireland (http://www.ieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/TGSEcIA-EcIA_Guidelines-Terrestrial_Freshwater_Coastal.pdf)

Preventing or minimising the impacts

Issue: Biodiversity	Impact					
Pressure: Electricity transmission lines underground	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/connectivity	Cumulative effects
Significance						
Climate change	=	>	>	>	>	>
Legislation/regulation	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
Management	5	5	5	5	5	5

References

Legislation/regulation

1. The EC Habitats Directive (<http://jncc.defra.gov.uk/page-1374>)
2. The Conservation (Natural Habitats, &c.) Regulations 1994 (<http://www.legislation.gov.uk/uksi/1994/2716/contents/made>)
3. The Conservation of Habitats and Species Regulations 2010 (<http://www.legislation.gov.uk/uksi/2010/490/contents/made>)
4. Wildlife & Countryside Act 1981: (<http://jncc.defra.gov.uk/page-1377>).

Management

5. Institute of Ecology and Environmental Management (2006) Guidelines for Ecological Impact Assessment in Britain and Ireland (http://www.ieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/TGSEcIA-EcIA_Guidelines-Terrestrial_Freshwater_Coastal.pdf)

Preventing or minimising the impacts

Issue: Biodiversity	Impact					
Pressure: Electricity transmission lines overhead	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/connectivity	Cumulative effects
Significance						
Climate change	=	>	>	>	>	>
Legislation/regulation	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
Management	5	5	5	5	5	5

References

Legislation/regulation

1. The EC Habitats Directive (<http://jncc.defra.gov.uk/page-1374>)
2. The Conservation (Natural Habitats, &c.) Regulations 1994 (<http://www.legislation.gov.uk/uksi/1994/2716/contents/made>)
3. The Conservation of Habitats and Species Regulations 2010 (<http://www.legislation.gov.uk/uksi/2010/490/contents/made>)
4. Wildlife & Countryside Act 1981: (<http://jncc.defra.gov.uk/page-1377>).

Management

5. Institute of Ecology and Environmental Management (2006) Guidelines for Ecological Impact Assessment in Britain and Ireland (http://www.ieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/TGSEcIA-EcIA_Guidelines-Terrestrial_Freshwater_Coastal.pdf)

Preventing or minimising the impacts

Issue: Biodiversity	Impact					
Pressure: New marine interconnection, sub-sea stations, and sub-sea lines (electricity) and marine interconnection (gas).	Habitat area	Disturbance	Chemical effects	Non-native species (inc. pathogens)	Habitat fragmentation/connectivity	Cumulative effects
Significance			N/A	N/A		
Climate change	>	>	N/A	N/A	>	>
Legislation/regulation	1, 2, 3	1, 2, 3	N/A	N/A	1, 2, 3	1, 2, 3
Management	4	4	N/A	N/A	4	4

References

Legislation/regulation

1. The UK Marine and Coastal Access Act 2009 (<http://www.legislation.gov.uk/ukpga/2009/23/contents>)
2. The Marine (Scotland) Act 2010 (http://www.legislation.gov.uk/asp/2010/5/pdfs/asp_20100005_en.pdf)
3. The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001 (<http://www.legislation.gov.uk/uksi/2001/1754/contents/made>)

Management

4. Institute of Ecology and Environmental Management (2010) Guidelines for Ecological Impact Assessment in Britain and Ireland – marine and coastal (http://www.ieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/Final_EcIA_Marine_01_Dec_2010.pdf)

Step 5: Qualitative/ quantitative analysis

- After using the matrices to identify relevant impacts for your policy/project, identified their significance, considered the interaction with climate change and analysed potential prevention and mitigation options, you should undertake further analysis.
- This should then feed into any impact assessment being developed
- The analysis can be either quantitative or qualitative (if available)
- For the case study we are considering, further analysis should be given to the following impacts:
 - Habitat area
 - Disturbance
 - Non-native species
 - Habitat fragmentation/connectivity
 - Cumulative effects

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- Individual elements of the GB regulated energy system likely to have the greatest impact on biodiversity and/or to arise most frequently are:
 - New overhead transmission lines
 - New underground transmission lines
 - New gas transmission network,
 - Shale gas connection to the grid
 - New CO₂ pipelines (for CCS)
- Their most significant potential impacts relate to:
 - Habitat area
 - Disturbance
 - Invasion of non- native species
 - Habitat fragmentation
 - Cumulative effects
- Climate change is likely to amplify many of these impacts.
- Existing statutory legislation or regulation preventing or minimising such impacts includes:
 - EC Habitats & Birds Directives
 - Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) Directives
 - Wildlife & Countryside Act 1981
 - The Conservation (Natural Habitats, &c.) Regulations 1994
 - The Conservation of Habitats and Species Regulations 2010
 - The UK Marine and Coastal Access Act 2009
 - The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001
- Management actions to prevent or minimise impacts that can be undertaken by a range of actors can be identified as follows:
 - IEEM (2006) Guidelines for Ecological Impact Assessment in Britain and Ireland – terrestrial and freshwater
 - IEEM (2010) Guidelines for Ecological Impact Assessment in Britain and Ireland – marine and coastal

Annexes

Roles and responsibilities of regulators for biodiversity

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- In the UK, biodiversity policy is devolved to a country level.
- [*The Natural Environment and Rural Communities \(NERC\) Act \(2006\)*](#) : requires all public bodies in England and Wales to have regard to biodiversity conservation when carrying out their functions. [Guidance for public bodies has been produced by Defra](#)
- [*The Nature Conservation \(Scotland\) Act 2004*](#) places a similar statutory duty on all public bodies in Scotland to further the conservation of biodiversity.
- Natural England, Natural Resources Wales and Scottish Natural Heritage are statutory consultees on environmental assessment processes and many development proposals, including Nationally Significant Infrastructure Projects. They must be consulted if a public body proposes to carry out an operation that may affect designated sites and protected species, or is considering permitting another party to carry out an operation that may do so.
- Environment Agency, Natural Resources Wales and the Scottish Environment Protection Agency are responsible for setting standards in environmental licences to protect and improve water, land and air, taking biodiversity into account.

The statutory legislation and regulations identified here provide the legal framework in relation to biodiversity.

International conventions

- [*The Convention on Wetlands of International Importance especially as Waterfowl Habitat \(Ramsar Convention or Wetlands Convention\)*](#): covers all aspects of wetland conservation and wise use
- [*The Convention on the Conservation of Migratory Species of Wild Animals \(Bonn Convention or CMS\)*](#): conserves migratory species and their habitats by providing strict protection for endangered migratory species
- [*The Convention on the Conservation of European Wildlife and Natural Habitats \(Bern Convention\)*](#): protects species and habitats of European importance
- [*The Convention on Biological Diversity*](#): requires creation and enforcement of national strategies and action plans to conserve, protect and enhance biodiversity

Europe

- [*The EC Birds Directive*](#): the means by which the EU meets obligations for birds under the Bern Convention and Bonn Convention, the Directive provides a framework for the conservation and management of wild birds in Europe; built around Special Protection Areas (SPAs) for rare or vulnerable species, and all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.

Relevant legislation and regulation

Europe (continued from previous slide)

- [The EC Habitats Directive](#): the means by which the EU meets obligations under the Bern Convention, the Directive focuses on the Natura 2000 network of protected sites (Specials Areas for Conservation – SACs and SPAs) and a strict system of species protection. Article 6 states that: *Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives... the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site... If... a plan or project must nevertheless be carried out for imperative reasons of overriding public interest... the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected* (in the UK, Ramsar sites are also afforded this level of protection by Government policy statements).
- [Environmental Impact Assessment \(EIA\) Directive](#): an EIA is mandatory for all projects listed in Annex I, which includes projects relevant to the UK regulated energy system
- [Strategic Environmental Assessment \(SEA\) Directive](#): SEA is mandatory for public plans, programmes and strategies that set the framework for future development consent of projects listed in the EIA Directive or that require an SEA under the [Habitats Directive](#)

Relevant legislation and regulation

UK

- [Wildlife & Countryside Act 1981](#): the main piece of legislation relating to nature conservation in Great Britain, implements the international conventions and European legislation (above) and protects sites of national importance (Areas or Sites of Special Scientific Interest, ASSI or SSSI) and certain species. The Act has been amended in various ways at a UK and country level
- [The Conservation \(Natural Habitats, &c.\) Regulations 1994](#) transpose the EC Habitats Directive into national law.
- [The Conservation of Habitats and Species Regulations 2010](#) consolidates amendments made in respect of England and Wales. In Scotland both sets of regulations apply. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and demand that 'competent authorities' (i.e. any Minister, government department, public body, or person holding public office) have a general duty to have regard to the EC Habitats Directive.

Marine

- [The UK Marine and Coastal Access Act 2009](#) provides for improved management and protection of the marine and coastal environment, including a Marine Management Organisation, a Strategic Marine Planning System, and designation of Marine Conservation Zones in territorial waters adjacent to England and Wales and UK offshore waters. [The Marine \(Scotland\) Act 2010](#) provides for designation of Marine Protected Areas to protect and enhance biodiversity.
- [The Offshore Petroleum Activities \(Conservation of Habitats\) Regulations 2001](#) transpose the Habitats Directive and the Birds Directive into national law in relation to oil and gas plans or projects wholly or partly on the United Kingdom's Continental Shelf and superjacent waters outside territorial waters.

Interactions with climate change

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