

IV

(Notices)

NOTICES FROM EUROPEAN UNION INSTITUTIONS, BODIES, OFFICES AND AGENCIES

EUROPEAN COMMISSION

COMMISSION NOTICE

Assessment of plans and projects in relation to Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC

(2021/C 437/01)

TABLE OF CONTENTS

	<i>Page</i>
1. INTRODUCTION	3
1.1. Purpose and nature of the document	3
1.2. Structure	3
2. GENERAL APPROACH AND PRINCIPLES	4
2.1. The stages of the Article 6(3) and 6(4) procedure	4
2.2. Approach to decision making	5
3. THE ARTICLE 6(3) AND 6(4) METHODOLOGY	7
3.1. Stage 1: Screening	7
3.1.1. Step 1: Ascertain whether the plan or project is directly connected with, or necessary to, the management of a Natura 2000 site	8
3.1.2. Step 2: Description of the plan or project and its impact factors	9
3.1.3. Step 3: Identify which Natura 2000 sites may be affected by the plan or project	10
3.1.4. Step 4: Assess whether likely significant effects can be ruled out in view of the site's conservation objectives	13
3.1.5. Conclusions: decision based on the outcome of the screening	15
3.2. Stage 2: Appropriate assessment	17
3.2.1. Step 1: Collect information on the project and on the Natura 2000 sites concerned	18
3.2.2. Step 2: Assessing the implications of the plan or project in view of the site's conservation objectives, individually or in combination with other plans or projects	23
3.2.3. Step 3: Ascertain the effects of the plan or project on the integrity of the Natura 2000 site	34
3.2.4. Step 4: Mitigation measures	36
3.2.5. Conclusions of the appropriate assessment	40
3.2.6. Further considerations: consultations, quality of the appropriate assessment, access to justice	42

3.3. Stage 3: Procedure under Article 6(4)	46
3.3.1. Step 1: Examining alternative solutions	47
3.3.2. Step 2: Examining imperative reasons of overriding public interest (IROPI)	53
3.3.3. Step 3: Identification, assessment and adoption of compensatory measures	55
(a) Main types of compensatory measures	55
(b) Guiding principles for setting compensatory measures and targets	57
(c) Timing of compensation	59
(d) Evaluation and monitoring of compensatory measures under Article 6(4)	59
(e) Setting compensatory measures for plans	61
4. STRATEGIC PLANNING AND APPROPRIATE ASSESSMENT OF PLANS	64
4.1. Strategic planning	64
4.2. Appropriate assessment of plans	64
4.3. Sensitivity mapping	66
4.4. Consultation and dialogue in strategic planning	70
5. LINKS WITH OTHER ENVIRONMENTAL ASSESSMENT PROCEDURES: EIA, SEA, WATER FRAMEWORK DIRECTIVE	71
5.1. Streamlining environmental assessments	71
5.2. Environmental impact assessment, strategic environmental assessment and the appropriate assessment	71
5.2.1. Opportunities for and benefits of streamlining EIA/SEA and appropriate assessment	72
5.2.2. Specific features of the appropriate assessment and differences with EIA/SEA procedures	73
5.2.3 Relationship between SEA/EIA/appropriate assessment and the strict species protection provisions of the Nature Directives	74
5.3. Assessments under Article 4(7) of the Water Framework Directive, coordinated or integrated with the Article 6(3) procedure under the Habitats Directive	75
6. KEY REFERENCES	77

ANNEX

1. INTRODUCTION

1.1. Purpose and nature of the document

The purpose of this document is to provide methodological guidance on the application of Article 6(3) and (4) of the Habitats Directive ⁽¹⁾. This guidance is intended to assist authorities and national agencies in the Member States and in candidate countries, as well as developers, consultants, site managers, practitioners and other stakeholders in the application of obligations stemming from these provisions. This document presents the views of the European Commission and is not legally binding; only the Court of Justice of the European Union (CJEU) is competent to authoritatively interpret Union law.

The guidance must be read in conjunction with the directives and national legislation, and with the advice set out in the Commission notice 'Managing Natura 2000 sites: The provisions of Article 6 of the Habitats Directive 92/43/EEC' ⁽²⁾ (referred to in this document as the 'Article 6 Guide'), which is the starting point for interpreting the key terms and concepts contained in the Habitats Directive. For ease of reading, this guidance cites the relevant parts of the Article 6 Guide.

The Commission has also adopted several sector specific guidance documents for different policy areas such as energy, including renewables, mining, inland water transport, developments in ports and estuaries, agriculture and forestry ⁽³⁾. These documents often analyse in more detail the specificities of plan or project assessments in these particular sectors. They can therefore be used to supplement the present general guidelines with practical sector specific considerations.

Under the principle of procedural autonomy, it is for individual Member States to decide how to put in place the procedural requirements deriving from the directive. It is the responsibility of the competent authority in each Member State to make the key decisions contained in the Article 6(3) and (4) assessments. In this guidance document, the term 'assessment' describes the whole process by which information is collected by plan or project developer, authorities, nature conservation and other agencies, non-governmental organisations (NGOs), and the public, and provided to the competent authority for consideration and evaluation.

The competent authority then determines the outcomes of the assessment and reaches a decision on whether or not to approve the plan or project, and if so, under which conditions. This process recognises that the assessments required under Article 6(3) and 6(4) relies on the collection of reliable information and data by multiple stakeholders, as well as on consultations with and between them.

This document is an update of the previous methodological guidance on Article 6(3) and (4) of the Habitats Directive ⁽⁴⁾ ⁽⁵⁾. It draws on experience in implementing the Habitats Directive and on related case-law of the CJEU, as well as on a review of EU guidance and literature, case study material, feedback and suggestions following consultation with EU Member State authorities and stakeholders. The preparation of this guidance document was supported by ATECMA S.L. and Adelphi consult GmbH, under a contract with the European Commission ⁽⁶⁾.

1.2. Structure

This document is made up of three main parts and an annex.

— The first section explains the general approach and principles underpinning the guidance. It includes the flow chart from the Article 6 Guide to illustrate how the Article 6(3) and 6(4) assessments should be structured and how the various stages of the assessments relate to the requirements of Article 6(3) and (4).

⁽¹⁾ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (OJ L 206, 22.7.1992, p. 7).

⁽²⁾ European Commission, 2019. Commission notice 'Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC' (2019/C 33/01), available at: [https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1555085968125&uri=CELEX:52019XC0125\(07\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1555085968125&uri=CELEX:52019XC0125(07))

⁽³⁾ https://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

⁽⁴⁾ Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC, European Commission, 2002.

⁽⁵⁾ The update is one of the deliverables of the 'Action Plan for nature, people and the economy', COM(2017) 198 final (Action 1).

⁽⁶⁾ EU Service contract Nr. 07.0202/2017/770634/SER/ENV.D.3 for technical and scientific support in relation to the delivery of the 'Action Plan for nature, people and the economy' – Actions 1, 2 and 13.

- The next section contains the main stage-by-stage methodological guidance. Each stage contains methods and tools, examples and suggestions on how to complete the assessments. This is supported by the use of checklists, matrices and step-by-step instructions for each stage of the assessment. It should be noted, however, that these are for illustrative purposes only and cannot cover all situations.
- The third section includes a chapter on strategic planning and the assessment procedure for plans in particular. This section also explores the links with other environmental assessments required under EU legislation.
- The annex provides examples of methods and further guidance and tools that can be used to implement Article 6(3) and 6(4) procedures (e.g. checklists or formats).

2. GENERAL APPROACH AND PRINCIPLES

2.1. The stages of the Article 6(3) and 6(4) procedure

Article 6, paragraphs 3 and 4, states the following:

'3. 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. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, 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 concerned and, if appropriate, after having obtained the opinion of the general public.'

4. If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest.'

Article 6(3) and (4) sets out a *step-by-step procedure* for assessing plans or projects that are likely to have impact on Natura 2000 sites. This involves three main stages:

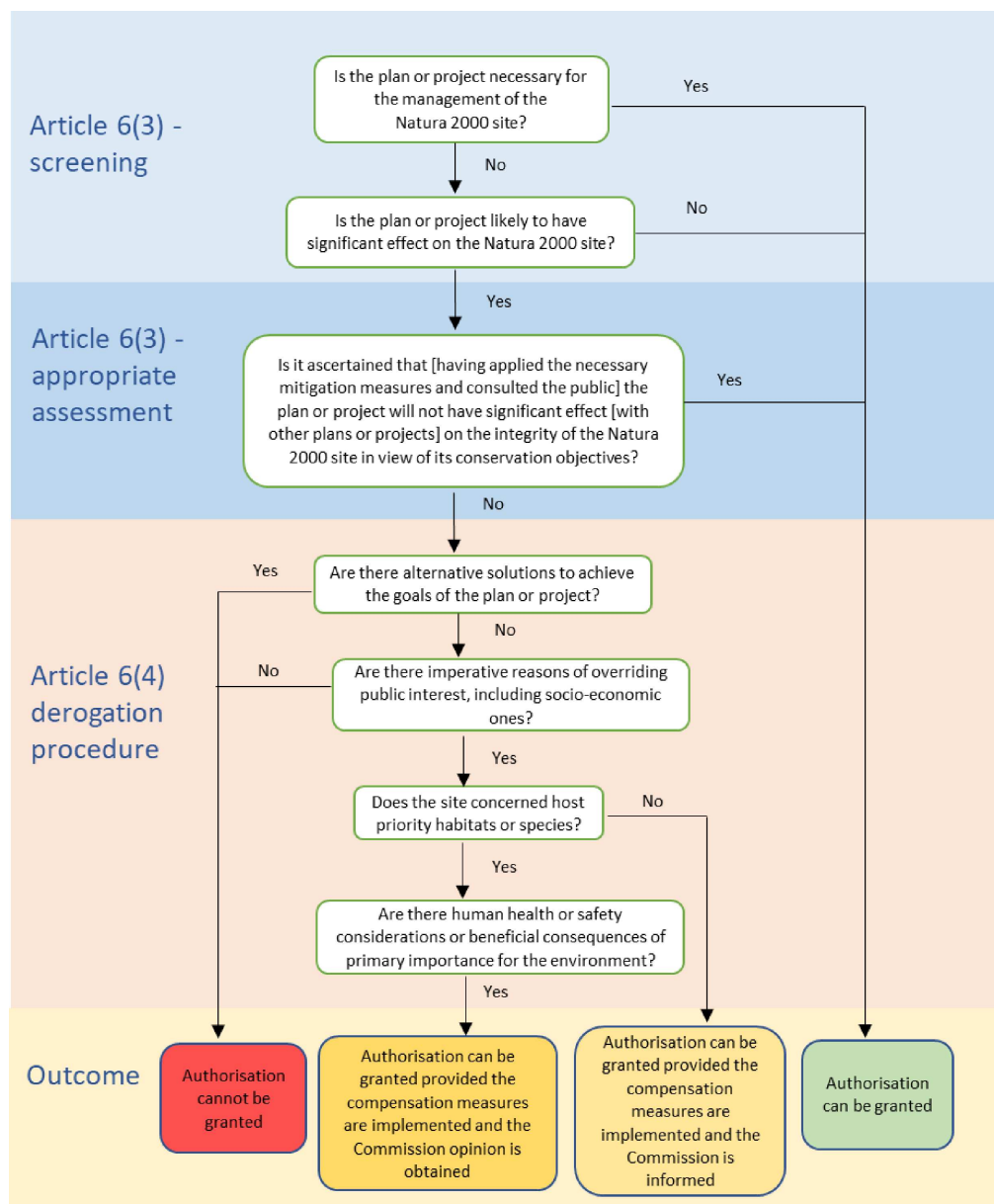
- **Stage one: screening.** The first part of the procedure consists of a pre-assessment stage ('screening') to ascertain whether the plan or project is directly connected with, or necessary to, the management of a Natura 2000 site, and, if this is not the case, then whether it is likely to have a significant effect on the site ⁽⁷⁾ (either alone or in combination with other plans or projects) in view of the site's conservation objectives. Stage one is governed by the first part of the first sentence of Article 6(3).
- **Stage two: the appropriate assessment.** If likely significant effects cannot be excluded, the next stage of the procedure involves assessing the impact of the plan or project (either alone or in combination with other plans or projects) against the site's conservation objectives, and ascertaining whether it will affect the integrity of the Natura 2000 site, taking into account any mitigation measures. It will be for the competent authorities to decide whether or not to approve the plan or project in light of the findings of the appropriate assessment. Stage two is governed by the second part of the first sentence and the second sentence of Article 6(3).
- **Stage three: derogation from Article 6(3) under certain conditions.** The third stage of the procedure governed by Article 6(4). It only comes into play if, despite a negative assessment, the developer considers that the plan or project should still be carried out for imperative reasons of overriding public interest. This is only possible if there are no alternative solutions, the imperative reasons of overriding public interest are duly justified, and if suitable compensatory measures are adopted to ensure that the overall coherence of Natura 2000 is protected.

⁽⁷⁾ In practice, more than one site may need to be considered.

Each stage of the procedure is influenced by the previous one. The order in which the stages are followed is therefore essential for applying Article 6(3) and (4) correctly. Figure 1 gives a flow chart of this procedure.

Figure 1

Assessing plans and projects in relation to the Natura 2000 sites; three stages of the Article 6(3) and (4) procedure



2.2. Approach to decision making

Like all EU environmental legislation, the Habitats Directive is based on the **precautionary principle** ⁽⁸⁾, i.e. that absence of scientific evidence on the significant negative effect of an action cannot be used as justification for approval of this action. When applied to Article 6(3) procedure, the precautionary principle implies that the absence of a negative effect on Natura 2000 sites has to be demonstrated before a plan or project can be authorised. In other words, if there is a lack of certainty as to whether there will be any negative effects, then the plan or project cannot be approved.

⁽⁸⁾ Article 191 of the Treaty on the Functioning of the European Union.

In practical terms, this means that the burden of proof lies with the plan or project developer to demonstrate – and for the competent authority to confirm – without reasonable doubt that:

- in stage 1 (screening) – likely significant effects can be excluded; or
- in stage 2 (appropriate assessment) – adverse effects on the integrity of a Natura 2000 site can be excluded.

When adverse effects on the integrity of a site are either certain or cannot be excluded, the plan or project can still be authorised by way of exception under Article 6(4) on condition that there are no alternatives, it is justified for imperative reasons of overriding public interest and sufficient compensatory measures are put in place to protect the overall coherence of the Natura 2000 network. The precautionary principle may also have some applications in such cases, particularly in relation to the extent of the compensatory measures to be applied (see section 3.3.3).

The Habitats Directive explicitly refers to the ‘site’s conservation objectives’ as a basis for applying Article 6(3). The CJEU, in its judgment in Case C-849/19, *Commission v Greece*, confirmed that conservation objectives must be formally established and that these must be site specific, refer to the specific values present in the site, and be precise ⁽⁹⁾.

Furthermore, the Court has repeatedly held that it is in the light of the conservation objectives that the scope of the obligation to carry out an appropriate assessment of the effects of a plan or a project on a protected site should be determined. ⁽¹⁰⁾ In other words, the decision as to whether the plan or project is likely to have significant impact on a Natura 2000 site should be taken in view of the site’s conservation objectives (see section 3.1 ‘Screening’). **It is therefore essential that site-specific conservation objectives are set without delay for all Natura 2000 sites and that these are made publicly available.**

As explained in section 3.2.2 below, site-specific conservation objectives must be set for all protected habitats and species that are significantly present on the site (i.e. habitats and species with A, B or C, but not D, site assessment in the Standard Data Form for the site ⁽¹¹⁾). The conservation objectives must specify targets to be achieved for each of the attributes or parameters that determine the conservation condition of the protected features.

The assessments must be reviewed – at both the screening and the appropriate assessment stages – if the plan or project is modified or further developed during the preparation process. For example if, during the screening phase, it cannot be excluded that there is a likelihood of significant effects, the plan or project developer may decide to revise the plan or project design in order to exclude the risk of possible significant effects. In such cases, the modified plan or project should be screened again to determine whether or not it is still likely to have a significant effect on the site.

Box 1

Making a decision on the basis of the appropriate assessment

It is the responsibility of the competent authorities, in the light of the conclusions of the appropriate assessment on the implications of a plan or project for the Natura 2000 site concerned, to decide whether or not to approve the plan or project. Approval can be given only after they **are certain that the proposed plan or project will not adversely affect the integrity of the Natura 2000 site**. That is the case where no reasonable scientific doubt remains as to the absence of such effects ⁽¹²⁾.

The focus is therefore on demonstrating the absence of adverse effects rather than their presence, reflecting the precautionary principle ⁽¹³⁾. The appropriate assessment must therefore be sufficiently detailed and substantiated to demonstrate the absence of adverse effects, **in light of the best existing scientific knowledge in the field** ⁽¹⁴⁾.

The same level of certainty is required if the decision is made during the screening stage; also at this stage there should no reasonable doubt as to the absence of likely significant effects

⁽⁹⁾ Paragraphs 58-59.

⁽¹⁰⁾ Paragraph 51.

⁽¹¹⁾ See Box 4 ‘Sources to use to identify impact on a Natura 2000 site’ in section 3.1.3 of this guide.

⁽¹²⁾ Case C-127/02, paragraph 59.

⁽¹³⁾ Case C-157/96 paragraph 63.

⁽¹⁴⁾ Case C-127/02 paragraph 61.

3. THE ARTICLE 6(3) AND 6(4) METHODOLOGY

3.1. Stage 1: Screening

This first stage examines the **likelihood of a plan or project having significant effects** upon a Natura 2000 site, either alone or in combination with other plans or projects. If likely significant effects cannot be excluded beyond any reasonable doubt, the plan or project will have to undergo a full appropriate assessment under Article 6(3).

The terms 'plan' and 'project' should be understood broadly.

A **project** can involve construction works, installations and other interventions in the natural environment, including regular activities aimed at utilising natural resources.

The term **plan** has also, for the purposes of Article 6(3), a potentially broad meaning, including land-use or spatial plans and sectoral plans (e.g. for transport, energy, waste management, water management, forest management, etc.).

The Directive does not limit the scope of either a plan or a project to particular categories. The key trigger is whether they are **likely to have a significant effect on a Natura 2000 site**.

See further details in the Article 6 Guide – sections 4.4.1 and 4.4.2.

As a pre-assessment stage, screening can normally be based on already existing information, including expert opinions (e.g. of competent environmental authorities) or published material (e.g. habitat maps or species inventories), rather than requiring detailed new evidence to be collected. However, where sufficient information e.g. on the presence of protected habitats and species in the area potentially affected by a plan or project does not exist or is outdated, further data may have to be collected and analysed in order to determine whether or not there are likely to be significant effects. If the information does not exist, then the assumption has to be that there is a likelihood of significant effects and that an appropriate assessment is required.

Screening needs to be carried out at an early stage, normally before all the details of a plan or project have been fixed, for instance when the location and general nature of a project are known but where the design process has not yet commenced. **Early screening** has several benefits:

- It can reduce the risk of delays and additional costs later on, when the plan or project is submitted for development consent.
- It allows early consultation and exchange of information between plan or project promoters, competent authorities and other stakeholders who have relevant data and expertise.
- It enables the developer of a plan or project to better gauge the next steps that may be required, without investing a significant amount of time and money.
- It makes it possible to identify and anticipate potential risks, both to Natura 2000 sites and to the plan or project itself, for example by highlighting the need for an alternative location or design for the plan or project to avoid any risk of damage, or by collecting further data to facilitate a timely assessment. Although key aspects of the initial planning should be clear, there should be also scope to adjust the plan or project.

When a plan or project is screened at an early stage, the screening may need to be reviewed at a later stage when more details of the plan or project become available. The scope of the screening analysis may differ for plans and projects, depending on the scale of the development and the likely effects.

The analysis comprises four steps:

1. ascertaining whether the plan or project is directly connected with or necessary to the management of a Natura 2000 site;
2. identifying the relevant elements of the plan or project and their likely impacts;
3. identifying which (if any) Natura 2000 sites may be affected, considering the potential effects of the plan or project alone or in combination with other plans or projects;
4. assessing whether likely significant effects on the Natura 2000 site can be ruled out, in view of the site's conservation objectives.

The following sections present each of the four steps in further detail, along with the outcome of screening and related documentation.

Table 1 below sets out the key differences between the screening and the appropriate assessment stages under Article 6(3) of the Habitats Directive.

Table 1

Differences between the screening stage and the appropriate assessment

Screening	Appropriate assessment
Ascertains whether significant negative effects on a Natura 2000 site are likely as a result of implementing the plan or project in view of the site's conservation objectives.	Assesses the likely effects on the Natura 2000 site in view of its conservation objectives and assesses whether adverse effects on the integrity of the site will or might occur.
If the occurrence of significant effects cannot be excluded with certainty, the plan or project has to undergo an appropriate assessment.	The plan or project can be authorised only if adverse effects on the integrity of the Natura 2000 site can be excluded.
Typically based on existing data, available knowledge and experience, and expert opinion.	Requires a detailed examination, often field surveys, expert advice, and an expert assessment of the specific case.
Mitigation measures cannot be considered ⁽¹⁵⁾ .	Assesses mitigation measures to eliminate or reduce adverse effects.

3.1.1. Step 1: Ascertain whether the plan or project is directly connected with, or necessary to, the management of a Natura 2000 site

This step ascertains whether the plan or project is connected with, or necessary for, the management of a site, i.e. if it contributes to achieving the site's conservation objectives.

The term 'management' refers to the conservation management of a site, i.e. it is to be understood within the meaning for which it is used in Article 6(1). Thus, if an activity is directly connected with, and necessary for, fulfilling the conservation objectives, it is exempt from the requirement for an assessment.

Plans or projects directly connected with, or necessary to, the conservation management of Natura 2000 sites should generally be excluded from the provisions of Article 6(3), but their non-conservation components may still require an assessment.

See further details in the Article 6 Guide – section 4.4.3.

A non-conservation component of a plan or project which includes conservation management among its objectives may still require an appropriate assessment. For example, this could apply to timber harvesting that forms part of a conservation management plan for a woodland designated as a Natura 2000 site. The part of the activity, which is not necessary to the site's conservation management, should be subject to an appropriate assessment ⁽¹⁶⁾.

There may also be circumstances where a plan or project directly connected with, or necessary for, the management of one site (the target site) may have a negative effect on another site. For example, to improve the flood management of a target site, the plan may propose to build a barrier in another site, which may have a significant adverse effect on that site. Therefore, the plan or project should be the subject of an assessment of the potentially significant effects on the other site.

⁽¹⁵⁾ Case C-323/17.

⁽¹⁶⁾ The technical report 'Natura 2000 and Forests' (2015) (chapter 4.6) provides examples of how to avoid conflicting goals between forest- and Natura 2000 management: <http://ec.europa.eu/environment/nature/natura2000/management/docs/Final%20Guide%20N2000%20Forests%20Part%20II-Annexes.pdf>

Consequently, the plans or projects that will be directly related or necessary to the management of the Natura 2000 sites under the Birds and Habitats Directives should be plans or projects that aim to, and will contribute to, preserving or, where appropriate, restoring the protected habitats and species in these sites to a favourable conservation condition.

Box 2

Examples of criteria for ascertaining whether a plan or project is directly connected with or necessary to the management of the Natura 2000 site

- measures envisaged in the plan or project are included in the management plan of the Natura 2000 site concerned or are proposed as part of other statutory, administrative or contractual measures required for maintaining and restoring (if necessary) the site, its habitat types and species in good state of conservation;
- there is a substantiated statement from the statutory body responsible for managing the Natura 2000 site that the activity is directly related to, and necessary for the management of the target site, and that it is clearly related to maintaining or improving the conservation status of habitat types or species in the site.

3.1.2. Step 2: Description of the plan or project and its impact factors

When describing the plan or project, it will be necessary to identify all aspects that have a potential to affect the Natura 2000 site, either alone or in combination with other plans or projects.

All phases of the project have to be taken into account including construction, operation and decommissioning.

For plans, appropriate details about the activities carried out within the plan need to be collected and analysed to see if individually or collectively they may have significant impact on the Natura 2000 sites, including in combination with other plans or projects.

Box 3 lists the key parameters of the plan or project to be identified. These elements are indicative only, to be adapted or complemented to suit each case. For some projects or plans, it may be necessary to identify parameters separately for the construction, operation and decommissioning phases.

Box 3

Examples of elements of the plan or project to be considered during screening

- size (e.g. in relation to direct land-take);
- overall affected area including the area affected by indirect impacts (e.g. noise, turbidity, vibrations);
- physical changes in the environment (e.g. modification of riverbeds or morphology of other water bodies, changes in the density of forest cover);
- changes in the intensity of an existing pressure (e.g. increase in noise, pollution or traffic);
- resource requirements (e.g. water abstraction, mineral extraction);
- emissions (e.g. nitrogen deposition) and waste (and whether they are disposed of on land, water or in the air);
- transportation requirements (e.g. access roads);
- duration of construction, operation, decommissioning, etc.;
- temporal aspects (timing of the different stages of a plan or project);
- distance from Natura 2000 sites and in particular from their designating features;
- cumulative impacts with other projects and plans.

3.1.3. *Step 3: Identify which Natura 2000 sites may be affected by the plan or project*

Identifying the Natura 2000 sites that may be affected should be done by taking into consideration all aspects of the plan or project that could have potential effects on any Natura 2000 sites located within the zone of influence of the plan or project. This should take into account all of the designating features (species, habitat types) that are significantly present on the sites and their conservation objectives.

In particular, it should identify:

- any Natura 2000 sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;
- any Natura 2000 sites within the likely zone of influence of the plan or project. Natura 2000 sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g. water) and various types of waste, discharge or emissions of substances or energy;
- Natura 2000 sites in the surroundings of the plan or project (or at some distance) which host fauna that can move to the project area and then suffer mortality or other impacts (e.g. loss of feeding areas, reduction of home range);
- Natura 2000 sites whose connectivity or ecological continuity can be affected by the plan or project.

The range of Natura 2000 sites to be assessed, i.e. the zone in which impacts from the plan or project may arise, will depend on the nature of the plan or project and the distance at which effects may occur. For Natura 2000 sites located downstream along rivers or wetlands fed by aquifers, it may be that a plan or project can affect water flows, fish migration and so forth, even at a great distance. Emissions of pollutants may also have effects over a long distance.

Some projects or plans that do not directly affect Natura 2000 sites may still have a significant impact on them if they cause a barrier effect or prevent ecological linkages. This may happen, for example, when plans affect features of the landscape that connect Natura 2000 sites or that may obstruct the movements of species or disrupt the continuity of a fluvial or woodland ecosystem.

To determine the possible effects of the plan or project on Natura 2000 sites, it is necessary to identify not only the relevant sites but also the habitats and species that are significantly present within them, as well as the site-specific conservation objectives.

Box 4 lists examples of the data sources that can be used for this purpose.

Box 4

Sources to use to identify impact on a Natura 2000 site

- the Natura 2000 standard data form for the site;
- site-specific conservation objectives (set out in the special areas of conservation (SAC) designation acts or in the special protection area (SPA) classification acts, or in the site management plan, or in a separate act);
- site management plans (e.g. that identify pressures and threats on the site);
- existing surveys and monitoring data on relevant species and habitat types, their distribution in and around the site, conservation status, pressures and threats on them;
- current and past maps of the site;
- land-use and other relevant existing plans;
- existing site survey material;
- existing data on hydrogeology;
- existing data on relevant substances (e.g. nitrogen deposition, composition of discharged waste waters);

- environmental impact assessments for similar projects or plans;
- relevant state of the environment reports;
- maps and geographical information systems;
- site history files, etc.

The information provided in the Natura 2000 standard data form ⁽¹⁷⁾ is the starting point for identifying the habitat types and species that are significantly present on the site and that could be affected by the plan or project, as well as any existing pressures and impacts on the site. Other information at site-level can be obtained from sources such as the Natura 2000 site management plan, lists of operations that may cause damage or deterioration, the results of monitoring surveys of habitat and species inside the site, as well as sources outside the Natura 2000 site at biogeographic, national and local level.

It is important that this data and information is made publically available e.g. through a central database or through online portals and websites from national or regional authorities, and regularly updated, so that all stakeholders and authorities concerned can easily have access to them.

Box 5

Key information sources on the designating features of the Natura 2000 sites

A standard data form is available for each Natura 2000 site. It contains information on the EU protected species and habitat types present on the site and provides a broad assessment of the condition of each species or habitat type on that site (scored from A to D). It provides information about the surface area, representativeness and conservation status of the habitats present in the site, and gives an overall assessment of the value of the site for conservation of the natural habitat types concerned. For the species present in the site, the form provides information on their populations, status (resident, breeding, wintering, migratory) and on the site's value for the species in question.

The form also includes contextual information about the site, including:

- General site characteristics, quality and importance;
- vulnerability (pressure on the site from human and other influences and the fragility of habitats and ecosystems);
- impacts related to human activities and natural processes that may have an influence, either positive or negative, on the conservation and management of the site as well as the proportion of the area of the site affected;
- management body responsible for the site;
- site management plans and practice, including traditional human activities;
- map of the site.

Conservation measures and management plans

For special areas of conservation, Member States must draw up conservation measures that correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the site (Article 6(1) of the Habitats Directive). This can involve, if need be, management plans specifically designed for the sites or integrated into other development plans, and/or other statutory, administrative or contractual measures.

Similarly, special protection areas must also be the subject of targeted conservation measures. Where available, Natura 2000 management plans can provide information about the sites' conservation objectives, the location and status of the species and habitats occurring in the site, their threats and the conservation measures required to improve their conservation condition on the site. All of this can be useful for the screening stage and for the appropriate assessment.

⁽¹⁷⁾ See: Explanatory notes in the Commission Implementing Decision 2011/484/EU of 11 July 2011 concerning a site information format for Natura 2000 sites (Decision setting format of the Standard Data Forms).

The Commission's website provides data and maps for all Natura 2000 sites in the EU via the Natura 2000 viewer and the Natura 2000 public database: <http://ec.europa.eu/environment/nature/natura2000/data/indexen.htm>. Most Member States also have publically available information on Natura 2000 sites and their features. Geographical information systems (GIS) can also aide in the understanding of the relationship between aspects of a plan or project and the specific features of the Natura 2000 site.

Practical tools and information systems are available in different countries to help identify potential impacts from different types of projects and plans on Natura 2000 sites. Box 6 gives some examples of such tools.

Box 6

Examples of information systems to identify potential impact from different types of projects and plans on Natura 2000 sites

Germany

The information needed to assess the potential negative effects of nearly all types of projects is provided by the information system FFH-VP- Info, produced by the Federal Agency for Nature Conservation. It hosts an extensive database on potential impacts and effects on specific habitat types and species that can be used for the screening and appropriate assessment. It provides detailed information on the sensitivity and potential effects of the impact factors for nearly all habitats and species protected under the nature directives that are present in Germany. It also includes checklists with assessments of the severity/relevance of each impact on habitat types and species.

See: <http://ffh-vp-info.de/FFHVP/Page.jsp>

Ireland

A GeoTool application is available in Ireland to support the data collection process in Stage 1 (screening) and Stage 2 (the appropriate assessment). It allows the user to select a point on the map and then search for SACs and SPAs within a set distance from the point, which the user can select depending on the level of potential environmental impact from a plan or project. The information given for each Natura 2000 site located in the selected range includes the list of habitats and species for which the sites are designated and a link to the conservation objectives for each site.

See: <https://gis.epa.ie/EPAMaps/AAGeoTool>

The Netherlands

The Dutch government has produced a tool to quickly assess the potential impact of a project during the initial phase. It describes the procedural steps needed if an assessment of the effects on Natura 2000 sites or protected species is part of the procedure for obtaining a permit. It helps identify potential impacts on individual species and habitat types and provides information about the sensitivity of species and habitat types to different activities.

See: www.natura2000.nl (under 'routeplanner beschermde natuur' and 'effectenindicator Natura 2000-gebieden').

Belgium

To assess acidification and eutrophication through aerial deposits (deposition of NO_x and NH₃, linked to activities such as intensive agriculture, industrial heating and energy processes and mobility), Belgium provides an interactive online application to conduct the first screening. It is a quick scan tool to identify potential impacts. If the scan gives a green light, no harmful impact is to be expected. If the tool gives a red light, there may be a harmful impact that merits closer examination via an appropriate assessment.

See: <https://www.milieuinfo.be/voortoets/>

See further details on information and practical tools to support the screening and the appropriate assessment in the annex to this guidance document (Section 1.1).

3.1.4. *Step 4: Assess whether likely significant effects can be ruled out in view of the site's conservation objectives*

The next step of the screening stage is to assess the likelihood and potential significance of the impacts identified in the previous step, taking into account potential cumulative impacts with other plans or projects.

Assessing the likelihood of significant effects

A likely significant effect is, in this context, any effect that may reasonably be predicted as a consequence of a plan or project that would negatively and significantly affect the conservation objectives established for the habitats and species significantly present on the Natura 2000 site. This can result from either on-site or off-site activities, or through combinations with other plans or projects.

It should be recalled here that if likely significant effects cannot be excluded beyond reasonable doubt, the plan or project will have to undergo a full appropriate assessment under Article 6(3) (see section 3.2.2.b for further details on assessing potential impacts).

Significance of the effects will vary depending on factors such as the magnitude of impact, the type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned.

Box 7 lists examples of indicators to quantify the significance of these effects.

Box 7	
Examples of significance indicators	
Impact type	Significance indicator
Loss of habitat area	Hectares of habitat lost, percentage of the habitat lost
Degradation	Area (in absolute terms and percentage) where the attributes used to determine the conservation status of the species or habitat has worsened as well as the scale of degradation for each of the attributes
Disturbance	Degree of intensity, duration or permanence of the disturbance factor, its distance from breeding areas
Fragmentation	Change in comparison with the original and desired states (e.g. creation of several small habitat patches instead of one large one, hectares of habitat exposed to the edge effect)
Indirect effects	Degree to which the area is opened to other threats (invasive alien species, human and animal penetration, additional developments).

Sources of information to assess the significance of effects include evidence from similar operations affecting sites with similar designated features in a similar conservation condition or with similar conservation objectives, and expert judgement based on available evidence. However, as each case is necessarily different, consideration must be given to the local circumstances. The assessment must therefore always be done on a case-by-case basis.

As stated in the Article 6 Guide, what may be significant for one site may not be significant for another. For example, a loss of a hundred square metres of habitat may be significant for a small rare orchid site, while a similar loss in a large steppe site may be insignificant if it does not affect the site's conservation objectives.

In case of plans, depending on the level of definition and details of the various aspects and components of the plan, it may be difficult to assess the magnitude and significance of all potential effects on individual sites at this stage. Nevertheless, the **likelihood** of significant effects on Natura 2000 site can still be assessed for instance in light of the type of plan or project and its potential zone of influence.

Plans must therefore be screened with a sufficient degree of caution (beyond reasonable doubt), and in light of the precautionary principle, to avoid ruling out components or actions with a potential impact on a Natura 2000 site and excluding them from further scrutiny in the appropriate assessment.

As regards the assessment **of mitigation measures** ⁽¹⁸⁾ in implementing the Article 6(3) procedure, the Court has ruled that 'in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site' (Case C-323/17).

However, project developers can sometimes design projects in a way to avoid or minimise potential impacts from the outset. This can be done by using best available technologies or by applying pre-emptive measures, including statutory measures (e.g. no go zones) prescribed e.g. in sector-specific regulations, Natura 2000 management plans or in spatial/zoning plans

Such generic components of the project can be considered in the screening, contrary to the plan- or project-specific mitigation measures that must not be taken into account at this stage. These components should be clearly identified in the project description. Specific mitigation measures e.g. construction of green bridges to allow migration of species for protection of which the site has been designated, particularly if imposed by the competent authority, should only be considered during the appropriate assessment, as described in section 3.2.5.

Assessing possible cumulative impacts with other plans and projects

During screening, the assessment of the likelihood of potentially significant effects should be done of the plan or project, *either alone or in combination with other projects or plans*. The assessment of such **cumulative impacts** is often less detailed at the screening stage than in the appropriate assessment. But there is still a need to identify all other plans or projects that could give rise to cumulative impacts with the plan or project in question.

The 'in combination' screening requires the identification of other plans and projects that can have potential effects on the same Natura 2000 sites and then assessing their capacity to cause significant effects when considered together with the plan or project under assessment. If this analysis cannot reach definitive conclusions, it should at least identify any other relevant plans and projects that should be scrutinised in more detail during the appropriate assessment.

Assessing cumulative effects at the screening stage

A series of individually low-level impacts may, in combination, produce a significant impact. When determining likely significant effects, the combination with other plans and/or projects should also be considered to take account of cumulative impacts during the assessment of the plan or project.

*The in-combination provision concerns other plans or projects that have been already **completed, approved but uncompleted, or proposed** (i.e. for which an application for approval or consent has been submitted). In addition, it is important to note that the assessment of cumulative effects is **not restricted to the assessment of similar types of plans or projects** covering the same sector of activity. All types of plans or projects that could, in combination with the plan or project under consideration, have a significant effect, should be included during the assessment.*

*Similarly, the assessment should look at the cumulative effects, not just between projects or between plans but also **between projects and plans (and vice versa)**. For example, a new project to build a major motorway may on its own not adversely affect the site, but when considered in combination with an already approved housing development plan for the same area, the impacts may become significant enough to adversely affect the site. By contrast, a plan may have no significant impact on Natura 2000 sites on its own but may be assessed differently if considered in combination with an already proposed or authorised major development project not included in that plan.*

See further details in the Article 6 Guide – section 4.5.3.

⁽¹⁸⁾ See: <http://curia.europa.eu/juris/liste.jsf?language=en&num=C-323/17>

Obtaining information on other plans and projects that can combine to generate cumulative impacts on the Natura 2000 site can be challenging. It is very useful to have databases or information systems that can provide this information in a selected area, as some countries already have or are in the process of developing ⁽¹⁹⁾. Existing databases to inform the public about SEA and EIA of plans and projects may also be used to identify possible cumulative effects ⁽²⁰⁾.

In any case, the competent authorities (environmental or sectoral) should be consulted and should be able to provide information about other plans/projects to consider during the screening.

Table 2 outlines the key steps for assessing cumulative effects on a Natura 2000 site.

Table 2

Cumulative impact assessment

Steps in the assessment	Activity to be completed
Define geographic boundaries and the timeframe for assessment	Define boundaries for examining cumulative effects; note these will be different for different types of impact (e.g. effects upon water resources, noise) and may include remote (off-site) locations.
Identify all projects/plans that could act in combination	Identify all possible sources of effects from the plan or project under consideration, together with other sources in the existing environment and other possible effects from other proposed projects or plans; timing and phasing of projects or plans.
Impact identification	Identify the types of impact (e.g. noise, water resource reduction, chemical emissions) that can affect the structure and functions of the site vulnerable to change.
Pathway identification	Identify potential cumulative pathways ⁽²¹⁾ (e.g. via water, air; accumulation of effects in time or space). Examine site conditions to identify where vulnerable aspects of the structure and function of the site are at risk.
Prediction	Predict the magnitude/extent of identified likely cumulative effects.
Assessment	Explain whether or not the potential cumulative impacts are likely to be significant, taking into account information collected during the 'assessing significance' step.

When a protected habitat or species in the site is already in an unfavourable condition or when critical thresholds of impacts for the habitats' or species' specific attributes are being exceeded (or if the site is subject to cumulative effects that will lead to either of these states), any additional plan or project which, either alone or in combination, adds further impacts to these levels is likely to have a significant effect on the Natura 2000 site.

3.1.5. **Conclusions: decision based on the outcome of the screening**

Deciding whether a plan or project is likely to have significant effects on a Natura 2000 site will have practical and legal consequences. Plans and projects that are considered not likely to have significant effects beyond reasonable doubt can be processed without reference to the subsequent steps of Article 6(3).

⁽¹⁹⁾ For example, in Germany the database and information system on FFH compatibility tests in North Rhine-Westphalia: <http://ffh-vp.naturschutzhinformatioenen.nrw.de/ffh-vp/de/start>

⁽²⁰⁾ For example, in Czechia there is an information system with a database of plans and projects that have gone through the EIA and SEA, including those subject to an appropriate assessment: <https://portal.cenia.cz/eiasea/view/eia100cr>; <https://portal.cenia.cz/eiasea/view/SEA100koncepte>

⁽²¹⁾ A source-pathway-reception model may be useful for this task.

Just like the appropriate assessment stage, the screening stage must conclude with a written substantiated decision by the competent authority in order to provide a record of the reasons for reaching this conclusion. The opinion of the management body of the Natura 2000 site should also be taken into consideration in drafting the conclusions.

The decision should also be made publically available. Although the text of the directive makes no explicit reference to this, the Court has recognised that public participation is required also in the screening phase of Article 6(3) (Case C-243/15, paragraphs 46-49). In addition, the Court has recognised the right for NGOs to challenge the screening decision taken by the authorities (Case C-243/15, paragraphs 56-61).

As the mere possibility of there being a significant effect on the site will trigger the need for an appropriate assessment, this decision can be taken either after a thorough examination of the plan or project, or on the basis of a simple analysis where it is already anticipated that there are likely to have significant effects (due to the type, size or scale of the plan or project, the characteristics of the Natura 2000 site or because of a high risk of combined effects with other plans or projects). This will enable the appropriate assessment to start as soon as possible.

In case of doubt, i.e. if it cannot be excluded, on the basis of available information, that a plan or project can have a significant effect on a Natura 2000 site, either individually or in combination with other plans or projects, the plan or project must be subject to an appropriate assessment.

The screening decision should also ideally provide some guidance on the scope of the appropriate assessment that is to follow and on likely significant impacts to be studied ⁽²³⁾. In the case of a plan, this should also cover all Natura 2000 sites which could be affected by the plan.

Box 8 provides a screening analysis template.

Box 8

Screening analysis template

Summary description of the plan or project and main aspects likely to cause impacts

Objectives of the plan or project and its main characteristics/activities during different phases (e.g. construction, operation and decommissioning, if appropriate).

Summary description of the Natura 2000 sites and their key features

Habitats and species for which the sites have been designated and their conservation objectives.

Description of individual aspects of the plan or project that could generate impacts on Natura 2000 sites including:

- size and scale;
- distance from the Natura 2000 sites;
- land-take (direct/indirect);
- resource requirements (e.g. water abstraction, soil/mineral excavation);
- emissions (disposal to land, water or air);
- transportation requirements;
- duration and timing of construction, operation, decommissioning;
- range of impact factors (e.g. noise, nitrogen deposition, turbidity).

Description of likely effects on the Natura 2000 sites in view of the specific conservation objectives set out for the designating features, including:

- reduction of habitat area, habitat degradation or fragmentation;
- disturbance to species, reduction in species populations and density;

⁽²³⁾ See section 3.2.1 on scoping.

- changes in ecological functions and/or features that are essential for the ecological requirements of habitats and species (e.g. water quality and quantity);
- interference with the key relationships that define the structure and function of the site.

Description of likely impacts in combination with other plans or projects:

- impact factors to be considered for cumulative effects;
- list and description of projects that may contribute to cumulative effects;
- assessment of the extent and significance of cumulative effects in view of the site-specific conservation objectives.

Criteria for assessing significance, indicators of significance, in view of the site-specific conservation objectives e.g.:

- degree of habitat loss (absolute, relative), changes in habitats structure;
- risk of species populations' displacement, level of disturbance, reduction of species home range, feeding area, refuge areas, alteration of favourable condition for breeding;
- importance of the habitats and species affected, e.g. representativeness, local variety;
- importance of the site (e.g. limit of distribution area for certain habitats and species, stepping stone, important for ecological connectivity);
- disruption or alteration of ecological functions;
- changes to key ecological features of the site (e.g. water quality).

Conclusions: Description, based on the above information, of the aspects of the plan or project, or combination of aspects, that are likely to cause significant impacts and the ones in relation to which the character or magnitude of impacts is not known.

Likely significant effects:

☐ No

| ☐ Yes or uncertain

3.2. Stage 2: Appropriate assessment

The purpose of the appropriate assessment is to assess the implications of the plan or project against the site's conservation objectives, either individually or in combination with other plans or projects.

The conclusions should enable the competent authorities to ascertain whether the plan or project will adversely affect the integrity of the site concerned. The focus of the appropriate assessment is therefore specifically on the species and/or the habitats for which the Natura 2000 site is designated.

Article 6 Guide – section 4.6.1.

The appropriate assessment applies both to projects and plans. It can be coordinated with, or integrated into, other environmental assessments, such as the environmental impact assessment (EIA) for projects, the strategic environmental assessment (SEA) for plans and programmes and assessments done in the context of the Water Framework Directive (see Section 5.2).

As in the EIA and SEA processes, the plan or project developer usually submits an appropriate assessment report to the competent authority for scrutiny. If the assessment identifies negative impacts, or the likelihood of such effects, the developer may also bring in mitigation measures at this stage to reduce the impact.

It is then the competent authority's responsibility to ascertain whether the plan or project will adversely affect the integrity of the site concerned or not, and so whether the plan or project can be approved or not. The competent authority can also set conditions for approval and, if appropriate, obtain the opinion of the general public beforehand. Further information about consultation in the context of the appropriate assessment is provided in section 3.2.7.

The assessment process will include collecting and assessing information from multiple stakeholders, including national, regional and local nature conservation authorities, scientific experts and NGOs. The competent authority can also use the information submitted by the plan or project developer to consult with internal and external experts and other stakeholders.

There will be occasions where the competent authority may need to request further information to ensure that the final assessment is as comprehensive and objective as possible. It should be recalled that appropriate assessment must be sufficiently detailed and substantiated to demonstrate *the absence* of adverse effects, in light of the best existing scientific knowledge in the field.

In summary, an appropriate assessment involves the following steps:

1. collecting information on the project and on the Natura 2000 site concerned;
2. assessing the implications of the plan or project in view of the site's conservation objectives, individually or in combination with other plans or projects;
3. ascertaining whether the plan or project can have adverse effects on the integrity of the site;
4. considering mitigation measures (including their monitoring).

These steps may need to be implemented iteratively, with some steps revisited in response to the results of subsequent steps. Each step is described in the following sections. Further aspects, such as public consultation and ensuring the quality of appropriate assessments, are covered at the end of this chapter.

3.2.1. **Step 1: Collect information on the project and on the Natura 2000 sites concerned**

The information required for the appropriate assessment includes a description of the Natura 2000 sites likely to be affected, the species and habitats significantly present on the site (so called designating features) and their conservation objectives, as well as a description of the plan or project and its possible effects on the site's conservation objectives. Part of this information may already have been collected during the screening phase, but usually the information will need to be more detailed for the appropriate assessment.

Pursuant to Article 5(2) of the EIA Directive and Article 5(4) of the SEA Directive, at the request of the developer, the competent authority should establish the scope of the environmental impact assessment (**scoping**). The purpose of scoping is to identify those elements that should be covered in the environmental assessment report prepared by the developer and submitted to the competent authority. In particular, the scoping exercise should help to identify the most important elements to be studied so that these can be addressed in greater detail. ⁽²³⁾

The scoping will vary depending on the plan or project and the sites concerned. However, normally it will include a description of the site, a description of the plan or project and the identification of its potential impacts on the site, in view of the site's conservation objectives. Irrespective of whether the appropriate assessment is integrated into the EIA/SEA or not, the scoping should indicate the baseline conditions within the site (i.e. the conditions of protected habitats and species significantly present on the site, the site-specific conservation objectives as well as of other elements that determine its integrity and the importance of the site for the coherence of the network) that will need to be identified and studied during the appropriate assessment, the level of detail of the analysis, the methods, criteria for the evaluation of significance, types of mitigation measures and alternatives to be analysed, etc.

Article 5(2) of the EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU)

Where requested by the developer, the competent authority, taking into account the information provided by the developer in particular on the specific characteristics of the project, including its location and technical capacity, and its likely impact on the environment, shall issue an opinion on the scope and level of detail of the information to be included by the developer in the environmental impact assessment report in accordance with paragraph 1 of this Article. The competent authority shall consult the authorities referred to in Article 6(1) before it gives its opinion.

⁽²³⁾ European Commission, Environmental Impact Assessment of Projects, Guidance on Scoping, 2017.

Member States may also require the competent authorities to give an opinion as referred to in the first subparagraph, irrespective of whether the developer so requests.

Article 5(4) of the SEA Directive (Directive 2001/42/EC)

The authorities referred to in Article 6(3) shall be consulted when deciding on the scope and level of detail of the information which must be included in the environmental report.

The extent and level of detail required for data collection, surveys and investigations will differ depending on the project and the site(s) affected. It must therefore be decided on a case-by-case. It may depend, for instance, on the complexity of the project and of the site, as well as the site's importance for the species and habitats for which it has been designated. It will also depend on the data that is already available on the site and the species and habitats significantly present, as well as on information from previous assessments, etc.

Harmonised and high quality geographic information usually facilitates the work of the developers, authorities and stakeholders and is of particular importance in the context of transboundary projects and impacts. For example, in the case of a project affecting a cross-border river or an installation which can potentially create transboundary pollution, it is very important that common standards are used to identify, assess and mitigate these impacts. The EU directive 'INSPIRE' (INfrastructure for SPatial InfoRmation in Europe) aims to make such standardised data available and used ⁽²⁴⁾.

Table 3 provides an indicative checklist of baseline information required for the appropriate assessment, while Table 4 gives an example of information to collect when assessing the effects of plans and projects on Natura 2000.

⁽²⁴⁾ Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) (OJ L 108, 25.4.2007, p. 1).

Table 3

Indicative checklist of baseline information required for the appropriate assessment

Baseline information about Natura 2000 sites and their features	Information sources	Available at/from
Conservation objectives of the Natura 2000 sites. Conservation measures established for the sites. Land use, prohibited and permitted activities in the sites. Main threats and pressures identified in the sites. Maps of Natura 2000 sites (showing site boundaries and location of relevant features)	Natura 2000 standard data forms Statutory acts to designate an SAC or SPA Management plans and other site management documents/instruments (regulations, contracts, agreements,)	National/regional online portals Official journals Conservation authorities/agencies Natura 2000 viewer ⁽¹⁾ Natura 2000 database ⁽²⁾ National databases
The habitat types and species present and their condition on the sites: conservation degree, representativeness, etc. Importance of the sites to the habitats and species present. Main ecological requirements, vulnerability and sensitivity of the habitat types and species.	Natura 2000 standard data forms Site management plans Designating acts Statutory plans and policies for nature conservation at national/regional/local level Species and habitats conservation action plans Current and historical maps, surveys, etc. Expert-based information	National/regional online portals Natura 2000 viewer Natura 2000 database National databases Competent authorities Available literature Scientific institutions
Conservation status of habitats and species, trends, main threats and pressures on them (in the biogeographic region and at national level).	National reports on conservation status under Article 17 of the Habitats Directive and Article 12 of the Birds Directive	Online reports ⁽³⁾
Baseline information about the project/plan	Information sources	Available at/from
Full characteristics of the plan or project: total area affected by the project, project activities, emissions, natural resources use, phases, time planning, etc. Relationship (e.g. key distances or pathways) between the plan or project and the Natura 2000 site.	Plan or project documents (blueprint, maps, etc.) Maps, GIS	Project/plan promoter Natura 2000 viewer
Characteristics of other plans or projects (implemented, approved or proposed) that may cause in-combination or cumulative effects with the project being assessed on Natura 2000 sites.	Databases, e.g. on SEA, EIA, appropriate assessments of plans/projects, regional or municipal plans, local authority planning applications	Competent authorities Online platforms

Information about other assessments required for project consent or plan approval.	National legislation	Competent authorities Official journals
Organisations involved in/concerned by the sector/activity of the plan or project.	Sectoral organisations/associations	Project/plan developer Competent authorities
Assessments of similar plans or projects.	EIA and SEA statements, appropriate assessment reports and other documentary evidence from similar plans or projects assessed in the past	Official journals Competent authorities, relevant agencies and other bodies

⁽¹⁾ <http://natura2000.eea.europa.eu/>

⁽²⁾ The European database on Natura 2000 sites consists of a compilation of the data submitted by Member States to the European Commission. This European database is generally updated once a year to take into account updates to the content of Member States national databases. It is available at: <https://www.eea.europa.eu/data-and-maps/data/natura-10>

⁽³⁾ <https://nature-art17.eionet.europa.eu/article17/>

Table 4

Information to collect when assessing the effects of plans and projects on Natura 2000 sites (guidelines in Spain)

Elements	Scope	Information to collect
Natura 2000 sites	Habitats	General
		— code, name, priority character; — characteristic species; — relevant variables of structure and function and ecological requirements.
		Biogeographical region (country level)
	Natura 2000 site	— conservation status of the habitat in the biogeographical region (national); — role and importance of the site for the habitat conservation.
		— conservation degree and representativeness of the habitat in the site; — conservation objective set for the habitat in the site; — habitat distribution area in the site (including mapping), % of total area (country/region); — pressures, threats and impacts affecting the habitat in the site; — vulnerability to the project potential impacts.
		— conservation condition of the species in the site; — conservation objective set for the species in the site; — species distribution area and use of the site (including mapping); — population and trends in the site; % of total population in the country/region; — existing pressures and threats on the species in the site; — species vulnerability to potential impacts (e.g. sensitivity to disturbance);
	Species	General
		— code, name, priority character, protection status in the region/country; — ecological requirements and factors that influence the species population dynamics.
		Biogeographical region (country level)

Landscape features that are important for the coherence of the Natura 2000 network	Biogeographical region (country level)	<ul style="list-style-type: none"> — type (ecological corridor, stepping stone, etc.); — Natura 2000 and other areas connected or ecologically related (including mapping); — species (or habitats) for which it is important, and importance for their conservation; — pressures, threats and impacts affecting the feature; — vulnerability to the project and potential impact.
---	--	---

Adapted from: Recommendations on the information to include in the appropriate assessment of projects on the Natura 2000 network in the EIA documents of the national administration in Spain (Ministerio de Agricultura y Pesca, Alimentación y Medio Ambiente, 2018). Available at: <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/evaluacion-ambiental/guias-directrices/>

3.2.2. **Step 2: Assessing the implications of the plan or project in view of the site's conservation objectives, individually or in combination with other plans or projects**

The appropriate assessment should include a comprehensive identification of all the potential effects of the plan or project likely to be significant on the site, taking into account cumulative and other effects likely to arise as a result of the combined action of the plan or project under assessment with other plans or projects.

(The Article 6 Guide – section 4.6.2)

The appropriate assessment should ensure that all structural and functional aspects that contribute to site integrity are considered in full, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and any residual impacts after mitigation measures have been applied.

Step 2 includes the following activities:

- identifying the conservation objectives of the Natura 2000 sites affected by the plan or project;
- identifying and assessing the impacts of the plan or project against the sites' conservation objectives;
- considering cumulative effects with other plans and projects.

(a) **Identifying the conservation objectives of the Natura 2000 sites affected by the plan or project**

In the appropriate assessment, the effects of a plan or project must be assessed against the conservation objectives set for the protected habitats and species present in the Natura 2000 sites.

Competent authorities must set conservation objectives for each site. The objectives must be established for all species and habitat types of Community interest under the Habitats Directive and bird species of the Annex I of the Birds Directive that are significantly present on a Natura 2000 site, as well as for regularly occurring migratory bird species.

Site-level conservation objectives are a set of specified objectives to be met in a site in order to make sure that the site contributes in the best possible way to achieving favourable conservation status at the appropriate level (taking into account the natural range of the respective species or habitat types).

Site-level conservation objectives should define the desired conservation condition of the species and habitat types on the site for maximising its contribution to achieving FCS [favourable conservation status] at the appropriate level. They are sometimes defined as a set of targets to be achieved over a certain period of time. These targets should be set in function of the conservation assessment of each species and habitat type on the site as recorded in the SDF [standard data form].

See further details in the Article 6 Guide – section 2.3.1, and the Commission Note on setting conservation objectives (available at: https://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm)

The conservation objectives for a Natura 2000 site are usually set in the management plans or relevant management instruments, or in other documents published for the sites (e.g. designation acts published in official journals). They should also be publically available.

Conservation objectives for each of the habitat types and species present in the site should be related to their ecological requirements and set with reference to the parameters used for determining its conservation condition on the site (e.g. their area, structure and functions or populations). They should specify targets to be achieved for each of these attributes/parameters. They should also include targets/limits for the ecological functions and processes on which the habitats and species depend (e.g. defining the required water quality and quantity for aquatic species).

The conservation objectives must be:

- **specific** – i.e. relate to a particular feature (species or habitat type) and define the condition(s) required to meet the conservation objective;
- **measurable and reportable** – i.e. include quantitative targets (possibly supplemented by qualitative ones, such as a description of good condition of a habitat or a population structure), enabling monitoring to assess whether the conservation objectives are being met and for the purposes of Article 17 of the Habitats Directive;
- **realistic** – i.e. given a reasonable timeframe and application of resources;
- **consistent in approach** – i.e. the structure of conservation objectives should, as far as possible, be the same across all sites, and at sites supporting the same feature, use similar attributes and targets to describe favourable conditions; and
- **comprehensive** – i.e. the attributes and targets should cover the properties of the feature necessary to describe its condition as either favourable or unfavourable.

The objectives must also specify whether they aim to **‘restore’** or **‘maintain’** the conservation status of the given feature of the site (the level of ambition predetermining the necessary conservation measures).

Adapted from ‘Commission Note on setting conservation objectives’ (available at: https://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm)

The lack of site-specific conservation objectives or the establishment of conservation objectives, which are not in line with the standard described above, jeopardises compliance with the requirements of Article 6(3).

Box 9 gives examples of site conservation objectives.

Box 9

Examples of conservation objectives for habitat types and species in Natura 2000 sites

Reefs (1170)

- the permanent habitat area (xx ha) is stable or increasing, subject to natural processes;
- the distribution of reefs is stable or increasing (map provided);
- the following community types are conserved in a natural condition: exposed intertidal reef community complex (xx ha); exposed subtidal community complex (xx ha) (a description of each of the community types is provided).

Shifting dunes along the shoreline with *Ammophila arenaria* (‘white dunes’) (2120)

- the habitat area (xx ha) is stable or increasing and there is no decline in its distribution (map provided), subject to natural processes;
- the natural circulation of sediment and organic matter is maintained, without any physical obstructions (e.g. physical barriers);
- the presence of species-poor communities dominated by *Ammophila arenaria* is maintained;
- negative indicator species (including non-native species, species indicative of changes in nutrient status and species not considered characteristic of the habitat) represent less than 5 % cover.

Dry heaths (4030)

- the current surface area (xx ha) and distribution of the habitat within the site is increased by x % (map provided);
- the abundance of typical species is maintained (list provided);
- a low cover of scattered native trees and scrub (< 10 % cover) is maintained;

- at least 1 % but not more than 10 % cover of the area of the habitat consists of bare ground;
- nitrogen deposition is maintained below critical load values defined for the site (e.g. 10-20 kgN/ha/yr).

Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) (6410)

- the current surface area (xx ha) and distribution of the habitat within the site is increased by x % (map provided);
- the vegetal composition is improved: at least xx positive indicator species present, including one 'high quality' species, negative indicator species cover collectively not more than 20 % cover, with cover by an individual species less than 10 %, and cover of non-native species not more than 1 %;
- the vegetal structure is improved: cover of woody species and bracken (*Pteridium aquilinum*) is not more than 5 %, broadleaf herb component of vegetation is between 40 and 90 %. At least 30 % of sward is between 10 and 80 cm tall;
- the physical structure is maintained: not more than 10 % bare soil.

Active raised bogs (7110)

- the area of the habitat in the site is extended (e.g. increase the current area by 10 % – from xx ha to yy ha) and its condition improved (e.g. by increasing the cover level of characteristic bog mosses –*Sphagnum* species to a minimum of x %);
- appropriate water levels are restored throughout the site (mean water level to be near or above the surface of bog lawns for most of the year; seasonal fluctuations should not exceed 20 cm, and should only be 10 cm below the surface, except for very short periods of time);
- soil pH and appropriate nutrient levels are maintained (relevant nutrients and their natural ranges are provided for the site);
- cover of scattered native trees and shrubs is less than 10 %.

Beech forests *Luzulo-Fagetum* (9110)

- the current conservation status is maintained (fav);
- the current surface area of the habitat in the site: xx ha is maintained;
- characteristic tree species are maintained: at least 70 % of canopy level composed of *Picea abies*, *Fagus sylvatica* ssp. *sylvatica*, *Abies alba* in various proportions, with rare presence of *Betula pendula*, *Sorbus aucuparia*, with an 80–90 % cover and 22–30 m height for spruce and fir, 18–24 m for beech at 100 years age;
- characteristic species for herb layer are maintained: Herb layer with at least three species/1 000 m² of the following acidophilous species *Calamagrostis arundinacea*, *Luzula luzuloides*, *Vaccinium myrtillus*, *Hieracium rotundatum*, *Athyrium filix-femina*, *Digitalis grandiflora*, *Dryopteris filix-mas*, *Festuca drymeia*, *Galium odoratum*, *Galium schultesii*, *Lamium galeobdolon*, *Luzula luzuloides*, *Oxalis acetosella*, *Poa nemoralis*, *Pteridium aquilinum*, *Veronica officinalis*;
- invasive and allochthonous tree species, including not-corresponding ecotypes cover less than 20 %; retention trees: at least three trees/ha; deadwood volume: at least 20 m³/ha.

***Asperulo-Fagetum* beech forest (9130)**

- the current surface area (xx ha) and distribution of the habitat within the site is increased by x % (map provided);
- the habitat quality (in terms of ecological structure and function) is improved by ensuring that: at least 95 % of canopy forming trees are locally native species such as beech, ash and oak site, with at least 50 % being *Fagus sylvatica*; approximately 10 % of the canopy includes a dynamic shifting pattern of gaps encouraging natural regeneration of tree species of all ages; at least X mature trees/ha and at least X relevant ground flora species/ha (list of relevant species provided);

- dead wood, standing and fallen, is increased where possible to provide a habitat for invertebrates, fungi and other woodland species (fallen trees and branches, dead branches on living trees or standing dead trees, all > 20 cm in diameter; minimum volume indicated).

Otter (*Lutra lutra*)

- the current population (xx individuals) is maintained;
- the ecological quality of freshwater (river) habitat is improved (over xx km);
- the number of couching sites and holts (number provided) is maintained and there is no significant decline in the fish biomass available (xx kg);
- connectivity with other otter populations along the river is improved.

Harbour porpoise (*Phocoena phocoena*)

- the current population of the species in the site is maintained (xx individuals);
- underwater noise to maximum is limited to xx dB;
- species range within the site is maintained by ensuring there are not artificial barriers that could restrict site use;
- the availability and density of prey within the site is maintained (e.g. including sand eel, whiting, herring and sprat);
- by-catch of harbour porpoise in fishing gears in the site is prevented.

Lesser Horseshoe Bat (*Rhinolophus hipposideros*)

- the population is maintained, with a minimum number of xx bats for the summer roost;
- the number and condition of summer and auxiliary roosts is maintained;
- the extent of potential foraging habitat (xx ha) and linear features xx (km), is maintained with no significant decline or loss within 2,5 km of the roost (map provided);
- there is no significant increase in artificial light intensity adjacent to the roost or along commuting routes within 2,5 km of the roost.

In the absence of conservation objectives ⁽²⁵⁾, the appropriate assessment should assume as a minimum that the objective is to ensure that the habitat types or habitats of species significantly present on the site do not deteriorate below the current level (at the time of the assessment) and that the species are not significantly disturbed, in line with the requirements of Article 6(2) ⁽²⁶⁾.

Although the focus of the assessment should be on the birds and the species and habitat types of Community interest significantly present on the site, it should not be forgotten that these target features also interact with other species, habitat types and with the natural environment in complex ways. In this regard, other species can also be relevant when looking at the potential effects on protected habitats if they constitute typical plant and animal species of the habitat type in question ⁽²⁷⁾ or play a significant role in the food chain on which the Natura 2000 site's target feature depend. This will be reflected in the site's conservation objectives and the appropriate assessment should also look at the possible impacts of the plan or project on these other species where relevant.

Landscape features that contribute to the ecological coherence of the network, including to its connectivity, should also be considered, where appropriate, in the assessment of the effects of plans and projects on Natura 2000 (see Table 4).

⁽²⁵⁾ Member States have 6 years from the time the site has been listed on the EU list to adopt site-specific conservation objectives and designate the SCI as an SAC. For SPAs, appropriate site-specific conservation objectives must be in place as from the date of their classification.

⁽²⁶⁾ The Court confirmed this position in Case C-127/02: 'Authorisation of a plan or project necessarily assumes that it is considered not likely to adversely affect the integrity of the site concerned and, consequently, not likely to give rise to deterioration or significant disturbances within the meaning of Article 6(2)' (paragraph 36).

⁽²⁷⁾ For an explanation of specific terms, see 'Interpretation Manual of European Union Habitats – EUR28' at <http://ec.europa.eu/environment/nature/legislation/habitatsdirective/indexen.htm#interpretation>

(b) **Identifying and assessing the impacts of the plan or project in view of the site's conservation objectives**

All aspects of the plan or project that can, either individually or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field.

The appraisal of effects must be based on objective and, if possible, quantifiable criteria. Impacts should be predicted as precisely as possible, and the basis of these predictions should be made clear and recorded in the appropriate assessment report.

See further details in the Article 6 Guide – section 4.6.

The assessment must cover the impact of the entire plan or project in question, with all the activities it comprises, and during all phases (preparation, construction, operation and, where relevant, decommissioning or reconditioning). The assessment must identify and differentiate the various types of impact, including direct and indirect effects, temporary or permanent effects, short- and long-term effects and cumulative effects

The assessment typically includes the analysis of the following possible impacts:

- **Direct loss:** reduction of habitat coverage as a result of its physical destruction (e.g. due to its removal or to the deposition of construction materials or sediments); loss of breeding, foraging, resting areas for species.
- **Degradation:** deterioration of habitat quality, leading to a reduced abundance of characteristic species or an altered community structure (species composition). This can be caused by changes in abiotic conditions (e.g. water levels or an increase in suspended sediments, pollutants or dust deposition); deterioration of breeding, foraging, resting areas for species.
- **Disturbance:** a change in existing environmental conditions (e.g. increased noise or light pollution, a greater frequentation of people and vehicles). Disturbance may cause, inter alia, the displacement of species individuals, changes in species behaviour, or the risk of morbidity or mortality.
- **Fragmentation:** leading to an alteration of distribution patches of relevant habitats and species, e.g. through the creation physical or ecological barriers in areas that are physically or functionally connected, or splitting them into smaller more isolated units.
- **Other indirect effects:** indirect change to the quality of the environment (resulting for example from a change in availability of nutrients and light, or an increase in the vulnerability of the site to other new threats such as invasive alien species, human and animal penetration).

These effects should be analysed in view of the site-specific conservation objectives, which implies that the analysis needs to be done not only in relation to the current condition of the habitats and species significantly present within the site but also in relation to their desired condition as defined by the conservation objectives (e.g. an increase in population size or habitat coverage by x %).

An analysis of effects in view of the site-specific conservation objectives must also therefore be done on the basis of the specific attributes or parameters that determine the conservation condition of the protected features (e.g. range, habitat, structure and function, population size, future prospects).

Each aspect of the plan or project should be examined in turn and its potential effects considered against the site's conservation objectives. Then the effects on all the affected habitats and species should be looked at together, and in relation to each other, so that the interactions between them can also be taken into account.

Different methods can be used to predict the potential impact of plan or projects. Box 10 lists some examples of methods that can be used to predict the impacts as well as the scale of the impact.

*Box 10***Examples of impact prediction methods**

Direct measurements, for example size of area of habitat lost or affected, can identify proportionate loss from species' populations, habitats and communities.

Flow charts, networks and systems diagrams identify chains of impact resulting from direct and indirect impacts, in line with how they are caused, illustrating interrelationships and process pathways.

Quantitative predictive models provide mathematically derived predictions based on data and assumptions about the force and direction of impact. Models may extrapolate predictions that are consistent with past and present data (trend analysis, scenarios, analogies which transfer information from other relevant locations) and intuitive forecasting. Some commonly used models predict the dispersal of pollutants in air, soil erosion, sediment loading of streams, and oxygen sag in polluted rivers.

Geographical information systems (GIS) can be used to produce models of spatial relationships, such as constraint overlays, or to map sensitive areas and locations of habitat loss. GIS are a combination of computerised cartography, storing map data, and a database management system, storing attributes such as land use or slope. GIS enable the variables stored to be displayed, combined, and analysed at speed.

Information from previous similar projects may be useful, especially if quantitative predictions were made initially and have been monitored during operation.

Expert opinion and judgement can be derived from previous experience and consultations.

Table 5 gives an example of a systematic cross-analysis between project elements and the protected features in a Natura 2000 site.

Table 5

Example of systematic cross-analysis between project components and protected features on a Natura 2000 site – simplified example for a fish farm

Project phase	Project component	Habitat 1 River	Habitat 2 Riverine forests	Habitat 3 Wet heaths	Species 1 Fish	Species 2 Invertebrates	Species 3 Birds
Construction	Ponds	Riverbed and river flow modification (xx m -length)	Loss of area (xx m ²)	Loss of area (xx m ²)		Changes in species communities	Disturbance, displacement of individuals. Loss of breeding habitat
	Buildings			Loss of area (xx m ²)		Habitat loss and deterioration	
	Roads		Local changes in water flow	Loss of area (xx m ²)		Habitat loss and deterioration	
Operation	Fish feeding and treatments	Water pollution by organic and chemical products			Habitat quality alteration due to water pollution		Disturbance, displacement of individuals
	Water abstraction	Habitat alteration due to flow reduction		Habitat degradation due to flow reduction	Habitat degradation due to flow reduction		
	Lighting					Disturbance, displacement of individuals	Disturbance, displacement of individuals
	Noise						Displacement of individuals

The assessment must be based on the best available scientific knowledge in the field. This means that the information must be complete and up-to-date. For this reason, it is often necessary to carry out **field surveys** in order to fill information gaps and collect precise data. This may involve, for example, prospecting the area (using sampling methods, censuses, inventories, etc.) to identify or confirm the precise location and distribution of natural features in relation to the planned activities of the plan or project under assessment, and their conservation condition.

A prior desk study may be useful to review available knowledge and identify the information needs that warrant further field survey work. For instance, this can be useful practice when the desk study indicates that there are vulnerable habitats present which have an associated rare assemblage of flora and/or fauna, or that the area to be affected hosts species critical for the conservation objectives of the site.

Data obtained from field surveys should provide an objective basis for the assessment process, which has to be carried out in view of the site-specific conservation objectives. For the field data to be complete, a sufficient timeframe has to be set, e.g. a one or more-year study that covers a whole vegetation cycle, taking into account the seasonality of the wildlife, or faunal surveys that may need to be repeated to confirm populations and trends over a period of time.

For major developments such as motorways, railways, windfarms, ports, waterways, etc., which due to their scale and nature are expected to have significant effects on a site, field studies are almost always required. They will need to include detailed mapping of protected habitats or of breeding or resting places of species etc. (unless some of these surveys and studies have already been carried out recently, for example during the preparation or updating of a management plan or while assessing another major development project in the area).

The **impact should be quantified or recorded using parameters** that make it possible to assess the scale and severity of the impact on the specific conservation objectives of the habitats and species significantly present on the site (see also box 7 in section 3.1.4 for indicators of significance) . This could include, for instance, parameters such as:

- Area of the habitat or habitat of the species permanently lost (e.g. by clearing of vegetation or removal of suitable breeding/nesting sites) assessed against the habitat area on the site, at regional, national and biogeographical level (percentage of habitat area lost) and against the target set in the site-specific conservation objective (which may include a target for restoration);
- Area of the habitat or habitat of the species affected (e.g. by pollution, noise, deterioration of other ecological conditions) assessed against percentage of the habitat area on the site, at regional, national and biogeographical level (percentage of habitat area affected) and against the target set in the site-specific conservation objective (which may include a target for restoration);
- Size of resident and migratory species populations affected, assessed against the local, regional, national and international populations (percentage of population affected) and against the target set in the site-specific conservation objective (which may include a target for an increase in population size within the site);
- Scale of impact (e.g. by pollution, noise, deterioration of other ecological conditions) on the quality of the habitat or habitat of the species or the survival of species affected, in view of their ecological requirements in the site as defined in the site-specific conservation objective (which may include a target for restoration).

As already mentioned in the points above, when assessing possible adverse effects, the assessment should not only consider negative changes in the current status, but also changes that can prevent the achievement of the conservation objectives in so far as they require improvement of the current conditions.

(c) ***Assessing cumulative effects with other plans and projects***

Cumulative impacts can result from the successive, incremental, and/or combined effects of a development (plan, project) when added to other existing, planned, and/or reasonably anticipated developments (see also section 3.1.4, table 2 on the key steps for assessing cumulative effects on a Natura 2000 site). Examples of cumulative impacts include:

- increased pollutant concentrations (particularly in water and soil), beyond levels compatible with the ecological requirements of the habitat or species protected in the site;
- reduction of water flow in a watershed due to multiple withdrawals, below the level which is compatible with the ecological requirements of the habitat or species protected in the site;

- interference with migratory routes or wildlife movement;
- increased pressure on habitats and species in an ecosystem from different developments.

Cumulative impacts encompass a broad spectrum of impacts on different geographical scales and timeframes. In some cases, cumulative impacts occur because a series of *projects of the same type* are being developed. Prime examples are:

- when several hydroelectric projects are constructed or planned on the same river or within the same watershed;
- when multiple oil and gas projects or mineral extraction projects are developed in close proximity; or
- when a number of wind farms are constructed or planned within the same flyway or region.

In other cases, cumulative impacts occur due to the combined effects of different types of projects in the same area, such as the development of a mineral extraction site, access roads, transmission lines, and other adjacent land uses. In some situations, different components of the same development are implemented and assessed separately, meaning that the cumulative impacts from these components should also be subject to a cumulative impact assessment.

Other plans or projects that could, in combination with the plan or project under investigation, have a significant effect on a site must be taken into account during the appropriate assessment. For example, a proposed road will pass some distance from a Natura 2000 site and the disturbance it will generate (e.g. noise) will not significantly affect bird species protected in the site. However, if there are other existing or proposed projects or plans (e.g. a road on the other side of the Natura 2000 site), then the total noise levels from all these projects combined may cause a significant level of disturbance for those bird species (noise levels above what it compatible with the ecological requirements of the species).

To note also that cumulative impacts could occur where impacted areas interact. An example of this would be where a proposed project is likely to reduce water levels in a Natura 2000 site. Although that resource reduction in itself may not be significant, if existing fertiliser and pesticide residues reach the site from a nearby intensive farming area, the lower water levels may mean higher concentrations of pollutants when run-off occurs, to an extent that the combined effect becomes significant, i.e. concentrations of pollutants beyond the levels which are compatible with the ecological requirements of the habitat or species protected in the site.

'In-combination' effects should already have been investigated at the screening stage (Section 3.2), and any other plans and projects that can act in combination should have been identified. The assessment at the screening stage may have been simplified, but, at the appropriate assessment stage, the identified impacts of other projects or plans that can act in combination with the plan or project being assessed should be properly evaluated. This requires quantifying and/or qualifying the magnitude of these other impacts and identifying the affected features of the Natura 2000 sites.

As stated in section 3.1.4, the in-combination provision concerns **other plans or projects that have been already completed, approved but not yet completed, or submitted for consent.**

In addition to the effects of the plans or projects that are the main subject of the assessment, it may be appropriate to consider the effects of already completed plans and projects, including those preceding the date of transposition of the directive or the date of designation of the site. The effects of such completed plans and projects would typically form part of the site's baseline conditions which are considered at this stage.

Plans and projects that have been approved in the past but have not yet been implemented or completed should also be included in the in-combination provision. As regards other proposed plans or projects, in the interest of legal certainty it would be appropriate to restrict the in-combination provision to plans that have been actually proposed, i.e. for which an application for approval or consent has been submitted. At the same time, it must be evident that, when assessing a proposed plan or project, Member States do not create a presumption in favour of other not yet proposed plans or projects in the future.

See further details in the Article 6 Guide – section 4.5.3.

The **geographical scope** to use when looking at cumulative effects will depend on the type of plan or project and the habitats and species significantly present on the site. It could be, for instance, within a certain radius, on a catchment area basis, or along a bird migration route. It should however cover the entire geographic area in which all plan or project activities and their cumulative effects are likely to have implications on the conservation objectives of the Natura 2000 sites in question.

Plan level assessments are particularly suitable for assessing cumulative and synergistic effects since they can pre-empt problems further down the line at the project stage, e.g. in the case of plans for specific sectors such as transport, energy, water management, as well as regional plans and strategies, land use plans, etc. In this context, it can be particularly useful to consult the environmental assessments of other existing plans and projects affecting the same area (SEA and appropriate assessment where available).

The appropriate assessment carried out on these plans may also determine the scope for the appropriate assessment of individual components of the plan (projects) in terms of their cumulative effects. For example, when scoping the appropriate assessment of a mineral extraction plan, it may be useful to determine the range or extent to which the wider network of access roads to extraction sites may contribute to the cumulative impacts, e.g. in relation to habitat fragmentation affecting populations of species.

Table 3 illustrates the sources that can provide information on other plans and projects that can give rise to cumulative effects. Tools to collate cumulative impacts, like **databases** recording the projects and plans to be considered, are helpful to streamline the assessment of cumulative effects. For instance, getting an overview of different activities is greatly facilitated if there is an up-to-date national or regional database, preferably including a dynamic map, which enables users to search all projects, including those still in the planning phase. In order for those databases to be useful for the appropriate assessment, competent authorities should aim to maintain the relevant documents online (e.g. impact assessment, mitigation measures introduced or conditions set for approval) also after permits are granted.

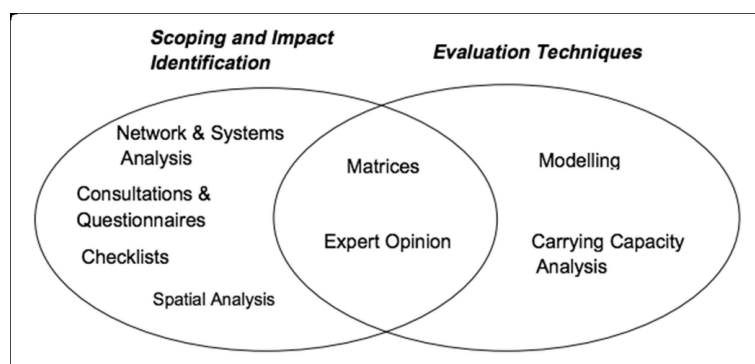
Competent authorities (nature conservation, sectoral) should be consulted in order to collect information about the other plans/projects that should be considered during the assessment. Competent authorities can also contribute or support the assessment of cumulative impacts, as they have the best overview and knowledge about other activities across wider areas. They can also collect all relevant information and provide this to the project developers and consultants.

The assessment of cumulative impacts may draw on information from a variety of **sources** including environmental studies and programmes, strategic, sectoral, and regional environmental assessments, project level environmental assessments, cumulative impact assessments from similar situations and targeted studies on specific issues. Expert advice can also be a good source of information on cumulative effects.

A wide variety of **methods and tools** can be used to assess cumulative impacts, which usually also includes a scoping and an evaluation phase (see Figure 2 below).

Figure 2

Methods and tools to assess cumulative impacts and impact interactions



Source: European Commission, 1999. Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.

Consultations, checklists, overlay maps, network and systems analysis can be suitable tools in the scoping exercise, which will identify the potential impacts to be looked at further in the cumulative impacts assessment.

- *Network and systems analyses* are based on the concept that there are links and interaction pathways between individual features of the environment, and that when one element is specifically affected, it will also have an effect on other features that interact with it.
- *Spatial analyses* use geographical information systems (GIS) and overlay maps to identify where the cumulative impacts of a number of different actions may occur, and identify impact interactions. It can also overlay a project's effect on selected receptors, features or resources to identify where the impact would be greatest.
- *Sensitivity mapping* can also be useful, as it may help predict potential cumulative impacts of certain activities on natural features that are vulnerable to the effects of those activities (see further details in section 4.2.2 of this guidance document) ⁽²⁸⁾.
- *Expert panels* can be formed to identify and assess cumulative impacts. Matrices can be used to evaluate impacts and to consider the cumulative impacts of multiple actions on a site or feature as well as interactions between impacts.
- *Modelling* provides an analytical tool to quantify cause-and-effect relationships by simulating environmental conditions. This can range from air quality or noise modelling, to the use of a model representing a complex natural system.
- *Carrying capacity* ⁽²⁹⁾ analyses look at the accumulation of impacts against thresholds. However it may not always be possible to set the threshold or carrying capacity for a particular feature or receptor.

Whatever methods are chosen, they should be adjusted to the information available for the analysis and provide, whenever possible, a quantitative estimate of cumulative impact. If qualitative estimates of cumulative impact are to be developed, they should be based on a consensual estimate of a panel of independent experts rather than on the opinion of an individual expert. A panel may also be useful and even necessary, for instance where cumulative effects to be assessed come from different projects, e.g. hydropower construction, dredging and irrigation on the same river.

The method chosen does not need to be complex. The aim should be to present the results in a way that can be easily understood by the developer, decision-maker (i.e. competent authority) and the public. Governments can play a significant role by providing and implementing enabling frameworks to guide this work and help identify and manage cumulative impacts.

Box 11 sets out an example of a step-by-step process for cumulative impact assessment. The process must be applied in a flexible way, i.e. the steps can be taken out of sequence and may need to be implemented iteratively, with some steps revisited in response to the results of others.

Box 11

Example of a process for carrying out the cumulative impact assessment (CumIA)

Step 1. Scoping

- Identify the geographical boundaries and the timeframe of the CumIA;
- Identify the protected habitats and species significantly present on the site and ecological processes to consider;
- Identify other existing and planned plans and projects (and human activities) that do/would affect the natural features to be included in the CumIA;
- Identify natural environmental drivers that also impact the condition of the features considered in the CumIA.

⁽²⁸⁾ An example of an Environmental Sensitivity Mapping online tool to support environmental assessment processes in Ireland is available at: <http://airo.maynoothuniversity.ie/mapping-resources/airo-research-maps/environmental-research-projects/environmental-sensitivity>

⁽²⁹⁾ In ecology, carrying capacity is measured as the maximum load of an environment. The physical features present in the environment act as limiting factors (e.g. food, water, competition, etc.). <https://www.biologyonline.com/dictionary/carrying-capacity>

Step 2. Assess cumulative impacts on the protected habitats and species

- Collect available information on the impact of other plans, projects, activities and natural drivers on the site-specific conservation objectives set for the natural features in the site;
- Estimate the cumulative impact on the protected features' site-specific conservation objectives — i.e. the total impact on the protected features when the impacts of the plan or project under investigation are combined with other plans or projects.

Step 3. Assess the significance of anticipated cumulative impacts

- Assess the significance of the anticipated cumulative impacts on the natural features considered, taking into account its conservation objectives. For example, when the cumulative impact on the condition of the natural features approaches or exceeds a threshold for a certain attribute defined in the conservation objective of that feature, the impact is significant.

Step 4. Managing cumulative impacts

- Identify, when necessary, additional mitigation measures to reduce an estimated cumulative impact on the protected features (carrying out the tasks described in steps 2 and 3 will be necessary to assess the value of such additional mitigation).

3.2.3. Step 3: Ascertain the effects of the plan or project on the integrity of the Natura 2000 site

The information collected and the predictions made about the degree and level of intensity of the impacts and changes that are likely to result from the different stages of the plan or project should now make it possible to assess the extent of the effects of the plan or project on the integrity of site.

The description of the site's integrity and the impact assessment should be based on the parameters that determine the conservation objectives and that are specific to the habitats and species of the site and their ecological requirements. This can also be useful for the subsequent monitoring of the impact of the plan or project during implementation.

As regards the connotation or meaning of 'integrity', this clearly relates to ecological integrity. This can be considered as a quality or condition of being whole or complete. In a dynamic ecological context, it can also be considered as having the sense of resilience and ability to evolve in ways that are favourable to conservation.

The 'integrity of the site' can be usefully defined as the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated.

A site can be described as having a high degree of integrity where the inherent potential for meeting site conservation objectives is realised, the capacity for self-repair and self-renewal under dynamic conditions is maintained, and a minimum of external management support is required.

See the Article 6 Guide – section 4.6.4.

The 'integrity of a site' thus relates to the site's conservation objectives, its key natural features, ecological structure and function. If the site's conservation objectives are not undermined by the proposed plan or project (alone and in-combination with other plans and projects) then the site's integrity is not considered to be adversely affected.

Site 'integrity' also concerns the main ecological processes and factors that sustain the long-term presence of the species and habitats in a Natura 2000 site. This will normally be covered by the conservation objectives for the site (e.g. to improve the quality of a habitat or extend the range of a species within the site). An impairment of these factors may jeopardise achievement of these objectives and have an adverse effect, even if the species or habitats are not directly impacted. For instance, the hydrological regime of a river, fluvial morphology processes, erosion, sediment transport and accumulation

are crucial factors for conserving river habitats and species, reflected in their conservation objectives. Influencing these processes could have an impact on the site's integrity, even if known patches of natural habitats and localities with confirmed species presence are not directly impacted.

When a permanent loss of a part of a habitat or a species population significantly present on the site, or a long-lasting deterioration of the site ecological structure, function and processes are identified as an impact resulting from the project or plan, it can be concluded that the plan or project will cause an adverse effect on the integrity of the site.

Nevertheless, it has also to be considered that the capacity for self-repair or resilience could in some cases allow the ecological structure and functions of the site to recover within a relatively short period of time, e.g. a community or a species population could recover naturally after some temporary disturbance. If so, it might be considered that the development would have no adverse effects on the integrity of the site. The capacity for self-repair would be normally reflected in the conservation objectives of the protected features (e.g. identifying certain thresholds or limits of change, like for instance allowing a certain level of temporary turbidity due to the maintenance works on rivers or other water bodies).

The degree of temporary adverse effects can determine whether an adverse effect on the site can be concluded. If the time needed for the habitat to recover is estimated in days, weeks or even a couple of months, it might be considered that there will be no adverse effects on the integrity of the site. A short period of disturbance, while affecting some habitats or species, might thus not cause an adverse effect on the integrity of the site. However, this must be carefully analysed on a case-by-case basis, having regard to the cycles of the ecosystems in the particular site, the structure of the communities, ecological functions and the processes in the site.

Assessing the effects on the integrity of the site may be relatively straightforward in small sites with just one or a few habitats or species and clear ecological functions. But it will be more difficult to assess in large sites with complex ecosystems and ecological functions, which host many habitats and species.

To assess the effects on the integrity of the site in a systematic and objective manner, it is important to have established thresholds and targets for each of the attributes that define the conservation objectives for the habitat types and species protected in the site. In order to help determine whether the integrity of a Natura 2000 site is affected, Box 12 below provides an indicative checklist reflecting the parameters used to define the conservation objectives for the habitats/species protected in the sites.

Box 12

Assessing the effects on the integrity of the site: a checklist example

Does the plan or project have the potential to:

- hamper or cause delays in progress towards achieving the site's conservation objectives?
- reduce the area, or quality, of protected habitat types or habitats of protected species present on the site?
- reduce the population of the protected species significantly present on the site?
- result in disturbance that could affect the population size or density or the balance between species?
- cause the displacement of protected species significantly present on the site and thus reduce the distribution area of those species in the site?
- result in a fragmentation of Annex I habitats or habitats of species?
- result in a loss or reduction of key features, natural processes or resources that are essential for the maintenance or restoration of relevant habitats and species in the site (e.g. tree cover, tidal exposure, annual flooding, prey, food resources)?
- disrupt the factors that help maintain the favourable conditions of the site or that are needed to restore these to a favourable condition within the site?
- interfere with the balance, distribution and density of species that are the indicators of the favourable conditions of the site?

3.2.4. Step 4: Mitigation measures

If adverse impacts on the site's integrity have been identified during the appropriate assessment or cannot be ruled out, the plan or project in question cannot be approved. However, depending on the degree of impact identified, it may be possible to apply mitigation measures to avoid these impacts or reduce them to a level where they will no longer adversely affect the integrity of the site.

See the Article 6 Guide – section 4.6.6.

Mitigation measures may be proposed by the plan or project developer or required by the competent national authorities in order to remove, pre-empt or reduce the impacts identified in the appropriate assessment to a level where they will no longer affect the integrity of the site.

In practice, the need for mitigation measures is often acknowledged at an early stage in the design or inception stages of a plan/project (for example at a 'pre-application' discussion between the developer/applicant and the nature conservation advisers) and included as part of the application for authorisation. Although mitigation measures cannot be taken into consideration when screening the plan or project, the fact that they have been identified as necessary can greatly assist the efficient, effective and timely execution of the appropriate assessment stage, and hence the decision on whether the plan/project can be authorised under Article 6(3).

The hierarchy of mitigation measures suggests first *avoidance* (i.e. preventing significant impacts from happening in the first place) and then *reduction* of impact (i.e. reducing the magnitude and/or likelihood of an impact). Examples are given in table 6 below:

Table 6

Examples of types of mitigation measures

Avoiding impact:

- technical solutions to prevent negative effects of the plan or project (e.g. noise or light or dust suppression devices);
 - placing of project elements to avoid sensitive areas (entire Natura 2000 sites or key areas within or connecting Natura 2000 sites);
 - protective fences and other measures to prevent damage to vegetation or wildlife;
 - avoidance of works during sensitive periods (e.g. breeding season of species);
 - optimisation of coordination of works to avoid cumulative impacts.
-

Reducing impact:

- emission controls;
 - noise barriers such as screens;
 - pollutant interceptors;
 - controlled access to sensitive areas during construction/operation;
 - wildlife crossings (e.g. bridges, tunnels and 'eco-ducts');
 - adapting impact-generating actions to reduce effects to the extent possible (e.g. from noise, light, dust ...).
-

At the level of plans, mitigation measures may include e.g. re-locating or removing components of the plan identified as having significant adverse effects on the site integrity. The proposed measures can be fine-tuned throughout the assessment process. At a high level of planning (e.g. in national/regional plans), mitigation could imply setting out potential measures to be worked out in more detail at a lower level, in line with the ecological, locational, timeframe, legal and financial parameters to be met as part of any planning application.

Mitigation measures **must not be confused with compensatory measures** which are only considered under the Article 6(4) procedure (see section 3.3.3 of this document).

Mitigation measures are measures that aim to minimise, or even eliminate, the negative impacts likely to arise when a plan or project is implemented so that the site's integrity is not adversely affected. These measures are considered in the context of Article 6(3) and are an integral part of the specifications of a plan or project or conditional to its authorisation.

Compensatory measures are independent of the project (including any associated mitigation measures). They are intended to offset the residual negative effects of the plan or project so that the overall ecological coherence of the Natura 2000 network is maintained. They can only be considered in the context of Article 6(4).

See the Article 6 Guide – section 5.4.1.

Specifically, measures which are not functionally part of the project, such as habitat improvement and restoration (even if contributing to a net increase of the habitat area within the affected site ⁽³⁰⁾) or creation and improvement of breeding or resting places for the species, should not be considered as mitigation as they do not reduce negative impact of the project as such. This type of measures, if they are outside the normal practice required for the conservation of the site, meet rather the criteria for compensatory measures.

Each mitigation measure must be described in detail, specifying how it will eliminate or reduce the adverse impacts identified, and how, when and by whom it will be implemented. The following aspects must be indicated:

- The impacts concerned that the mitigation measures aim to address, including information on relevant parameters (e.g. the area of the habitats of Community interest subject to deterioration and their conservation degree in the site, the species population subject to disturbance).
- The expected results from implementing the proposed mitigation measures, with reference to each parameter (e.g. habitat area, species population numbers or structure and functions).
- Technical-scientific feasibility and degree of effectiveness expected of the proposed measures.
- The person or body in charge of implementation.
- The management of the area where the mitigation measures will be implemented (methods, duration).
- The location and timing of the measures with relation to the plan or project.
- The methods for checking implementation of the measures.
- The financing of the measures.
- The monitoring programme to verify the effectiveness of the measures, and adapt them if necessary.

The **effectiveness of mitigation measures** needs to be demonstrated, e.g. with reference to successful implementation in other similar developments, and monitored, and by putting in place a system to monitor results and take corrective measures where failures are detected. The following checklist can be used to assess effectiveness:

Box 13

Assessing the effectiveness of mitigation measures

- Are mitigation measures feasible within the plan or project under evaluation?
- Do mitigation measures clearly target the impacts identified in the appropriate assessment? Are they effective in reducing these impacts below a level of significance?
- Are there the sufficient means and resources foreseen to implement the mitigation measures?
- Are there records of successful prior implementation of the mitigation measures proposed?
- Is there an indication of limiting factors and rates of success or failure of the proposed measures?
- Is there a comprehensive plan on how to implement and sustain the mitigation measures (including monitoring and evaluation where needed)?

Monitoring mitigation measures is crucial to check their successful and timely implementation and to detect any unexpected impacts requiring additional measures.

⁽³⁰⁾ See CJEU judgment C-521/12.

The effectiveness of mitigation measures must be demonstrated before the plan or project is approved. In addition, when the effectiveness of mitigation depends on the presence of stable natural conditions or natural processes that could change (e.g. due to floods, droughts, storms or other events), monitoring should also be used to verify the expected results and detect any possible changes warranting the adaptation or reprogramming of the measures.

The results of monitoring should be shared with the competent authorities to help formulate suitable response options, if needed e.g. to address any apparent failure in the mitigation measure or to respond to unexpected impacts or to effects for which only a risk was identified. Table 7 gives an example of a matrix for presenting information on mitigation measures.

The expected results of implementing the mitigation measure in terms of preventing or reducing the impacts identified in the assessment should be properly documented.

Table 8 gives an example of a matrix to present the outcome of the assessment after the mitigation measure.

Table 7

Information on mitigation measures proposed for a plan or project

Adverse effects identified (list)	Description of the measures, details on implementation, effectiveness, monitoring				
Effect #1	Measure #1				
Name/description	Explain how the measure will contribute to avoiding/reducing the effects on the integrity of the site	Explain how it will be implemented and by whom	Demonstrate its effectiveness (e.g. based on scientific evidence / expert rationale)	Provide a timescale of implementation, relative to the plan or project	Set out the proposed monitoring scheme and reporting requirements, including how any possible unexpected impacts will be addressed
	<i>Provide details of the mitigation measure, explaining the elements that will address the adverse effects</i>	<i>This may include details of legally binding agreements that should be completed in advance of plan or project authorisation</i>	<i>This may include evaluation: (i) reports or evidence from similar projects or plans; (ii) statements from relevant experts; or (iii) support from the relevant nature conservation agency</i>	<i>Some mitigation may be integrated into the plan or project; in some cases, it will be an additional measure that needs to be in place either before plan or project authorisation or shortly after it</i>	<i>This may be done through legally binding agreements in advance of plan or project authorisation</i>

Table 8

Summary results of the assessment after implementation of mitigation measures

Relevant features in the site	Summary description of impacts/adverse effects	Importance/magnitude of the effects	Description of the proposed mitigation measures	Expected results regarding the mitigation of effects
Habitats				
—				
—				
Species				
—				
—				
Other natural elements of importance for the integrity of the site				

3.2.5. *Conclusions of the appropriate assessment*

An assessment carried out under Article 6(3) of the Habitats Directive must contain complete, precise and definitive findings and conclusions in the light of the best scientific knowledge in the field. It must be capable of removing all reasonable scientific doubts as to the effects of the plan or project proposed on the protected site concerned.

The conclusions of the appropriate assessment must clearly relate to the integrity of the site and its conservation objectives. Where the assessment concludes that there will be adverse effects on the integrity of the site, it should clarify for which aspects, taking mitigation into account, there are residual adverse effects. This will be important if the plan or project is further considered under Article 6(4).

A worked out example of a possible format for recording the results of the appropriate assessment is provided in Table 9 on the next page.

Table 9

Example of an appropriate assessment record

Site 1: SPA Xxx						
Summary description: The SPA contains the largest extent of marsh in Xxxxxx region. The wide diversity of coastal habitats found on the site supports important numbers of water birds throughout the year.						
Potential impact	Feature affected	Conservation objectives	Adverse effect of plan/project alone on the feature	Adverse effect of plan/project in combination with other plans or projects on the feature affected	Possible avoidance or mitigation of adverse effects	Conclusion: adverse effects on the integrity of the site: Yes. No. Uncertain. Long term. Short term
Habitat loss Species disturbance	Birds of coastal habitats: (species names)	Maintain population and distribution of species... (details in relation to the conservation objectives). Maintain structure and functions and supporting processes on which habitats of species rely... (details in relation to the conservation objectives).	Component X of the plan will reduce the area of saltmarsh available to the species. A potential loss of 110 ha has been estimated in the appropriate assessment.	There is the potential for adverse effects in combination with other plans that would increase indirect pressures on the sites. Increased disturbance through a rise in recreational use, associated with other projects, would have adverse effects on the site.	No	Yes – long term
Habitat deterioration	Birds of lowland wet grasslands (species names)	Maintain population and distribution of species... (details in relation to the conservation objectives). Maintain structure and functions and supporting processes on which habitats of species rely... (details in relation to the conservation objectives).	Component Y of the plan could cause a modification in the water flow regime that could affect wet grasslands that provide suitable habitat for the species(details in relation to the conservation objectives)	Not expected	Uncertain	Uncertain (component Y is not defined in detail so effects on flow regime cannot be properly assessed and quantified).
.....						

Following the completion of the appropriate assessment, its conclusions should be clearly presented in a report which:

- (a) describes the plan or project in sufficient detail for members of the public to understand its nature, scale and objectives;
- (b) describes the baseline conditions of the Natura 2000 site as well as its conservation objectives;
- (c) identifies the adverse effects of the plan or project on the Natura 2000 site in view of the site-specific conservation objectives;
- (d) explains how those effects will be avoided or sufficiently reduced through mitigation;
- (e) sets out a timescale and identifies the mechanisms through which the mitigation measures will be secured, implemented and monitored;
- (f) draws a duly justified conclusion as to the impact on the integrity of the site.

The appropriate assessment report should be drafted clearly, with: (i) easy-to-follow evidence trails (e.g. leading from activities to pressures and to sensitivities and vulnerabilities of affected natural features); and (ii) an adequate level of evidence or analysis, suitable for consultation with the relevant nature conservation agencies and the public.

For some of the plan's elements or components, adverse effects on the site's integrity may be uncertain or not possible to determine with enough confidence. Such aspects would, however, still require further consideration. Many national strategies comprise key planned investments like new reservoirs or transport corridors which may affect Natura 2000 sites, but whose exact location, design or operation details are not determined yet; such elements must be duly assessed at project level. In such cases, this fact, i.e. the remaining uncertainty, should be recorded in the results of the assessment, and such components/elements of plans must undergo appropriate assessment at project level (see also section 4.2).

The conclusions of the appropriate assessment, together with any agreed mitigation measures or conditions, should also be part of the permit or any other decision taken in relation to the plan or project under consideration.

Making a decision on the basis of the appropriate assessment

It is for the competent authorities, in the light of the conclusions of the appropriate assessment into the implications of a plan or project for the Natura 2000 site concerned, to approve the plan or project. This can be done only after they have made certain that the plan or project will not adversely affect the integrity of the site. That is the case where no reasonable scientific doubt remains as to the absence of such effects.

Where doubt remains as to the absence of adverse effects on the integrity of the site linked to the plan or project being considered, the competent authority will have to refuse authorisation (C-127/02 paragraph 57).

See further details in the Article 6 Guide – section 4.7.3.

A specimen report for presenting the outcomes of the appropriate assessment is presented in Box 16 at the end of section 3.2.

If the competent authority determines that adverse effects will occur or cannot be excluded, then the plan or project may not proceed (unless the conditions of Article 6(4) apply – see section 3.3).

3.2.6. Further considerations: consultations, quality of the appropriate assessment, access to justice

Consultations

Consultations with experts, other authorities, NGOs, potentially affected groups or the general public can improve the environmental information available to those carrying out the appropriate assessment and to decision-makers, e.g. by identifying environmental effects or designing suitable mitigation measures. Consultations can also help minimise potential conflicts and delays.

Consultation with relevant authorities, experts in biology or ecology as well as with representatives of relevant industries and policy sectors, stakeholders and NGOs during the procedures laid down in Article 6(3) improves the availability of information and the consideration of different points of view.

Nature conservation and sectoral authorities should cooperate during the assessment process to ensure that: (i) the appropriate assessment is based on the best available information and experiences; and (ii) all relevant aspects are properly taken into account.

Public participation in the Article 6(3) procedure

The Habitats Directive does not contain an explicit obligation to obtain the opinion of the general public when authorising plans or projects requiring an appropriate assessment. According to the wording of Article 6(3) this has only to be done if it is 'considered appropriate'. However, the Court has clarified that, on the basis of the requirements of the Aarhus Convention ⁽³¹⁾, the public concerned, including recognised environmental NGOs, has the right to participate in the authorisation procedure (C-243/15 paragraph 49). This right involves in particular, 'the right to participate "effectively during the environmental decision-making" by submitting, "in writing or, as appropriate, at a public hearing or inquiry with the applicant, any comments, information, analyses or opinions that it considers relevant to the proposed activity"' (C-243/15, paragraph 46).

See further details in the Article 6 Guide – section 4.7.2.

When the appropriate assessment is coordinated or runs jointly with the environmental impact assessment (EIA) / strategic environmental assessment (SEA), it can also benefit from the necessary provisions regarding public participation under those directives. However, it is important that the results of the appropriate assessment are distinguished and distinct from those of the EIA/SEA. This is required to ensure the correct application of Article 6(3), second sentence (authorisation can only be given after having ascertained that it will not adversely affect the integrity of the site concerned).

The EIA Directive (Article 6) requires the Member States to: (i) ensure consultation of relevant authorities; and (ii) provide for early and effective opportunities to inform the public and allow the public concerned to participate in the environmental decision-making procedure. This includes the setting of reasonable time frames for different phases of participation. Similar requirements are set out in Article 6 of the SEA Directive.

Public participation under the EIA and SEA Directives

EIA Directive

Preamble:

- *Effective **public participation** in the taking of decisions enables the public to express, and the decision-maker to take account of, opinions and concerns which may be relevant to those decisions, thereby increasing the accountability and transparency of the decision-making process and contributing to public awareness of environmental issues and support for the decisions taken.*
- *Participation, including participation by associations, organisations and groups, in particular non-governmental organisations promoting environmental protection, should accordingly be fostered, including, inter alia, by promoting environmental education of the public.*
- *Among the objectives of the Aarhus Convention is the desire to guarantee rights of public participation in decision-making in environmental matters in order to contribute to the protection of the right to live in an environment which is adequate for personal health and well-being. Article 6 of the Aarhus Convention provides for public participation in decisions on activities not so listed which may have a significant effect on the environment.*

⁽³¹⁾ Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters. This Convention was concluded in Aarhus, Denmark in June 1998. The EU is one of the signatories since 2005 under Decision 2005/370/EC <http://ec.europa.eu/environment/aarhus/legislation.htm>

Article 6(2): In order to ensure the effective participation of the public concerned in the decision-making procedures, the public shall be informed electronically and by public notices or by other appropriate means, of the following matters early in the environmental decision-making procedures referred to in Article 2(2) and, at the latest, as soon as information can reasonably be provided:

SEA Directive

Preamble: In order to contribute to more transparent decision making and with the aim of ensuring that the information supplied for the assessment is comprehensive and reliable, it is necessary to provide that authorities with relevant environmental responsibilities and the public are to be consulted during the assessment of plans and programmes, and that appropriate time frames are set, allowing sufficient time for consultations, including the expression of opinion.

Article 6(4): Member States shall identify the public for the purposes of paragraph 2, including the public affected or likely to be affected by, or having an interest in, the decision-making subject to this Directive, including relevant non-governmental organisations, such as those promoting environmental protection and other organisations concerned.

Ensuring the quality of the appropriate assessment

As stated previously, the appropriate assessment must be based on the best scientific knowledge in the field. Accordingly, the appropriate assessment must be prepared by a person or persons with the requisite ecological expertise and experience. The study should be supplemented as necessary by additional expertise and experience (e.g. geology, hydrology, engineering or planning, environmental law) and produced in a scientifically complete, professional and objective manner.

While the study to inform the appropriate assessment will generally be submitted by those seeking approval for a plan or project, competent authorities should satisfy themselves that it demonstrates sufficient expertise, scope and focus in relation to the ecological or other issues (e.g. hydrological) concerned, and sufficient competence and standards in scientific methodology and impact assessment. In order to comply with these quality requirements, some countries have adopted a certification scheme or qualification/authorisation system for those who undertake the appropriate assessment study (see box 14).

Ensuring quality of the environmental impact assessment report in the EIA Directive

In order to ensure the completeness and quality of the environmental impact assessment report:

- (a) the developer shall ensure that the environmental impact assessment report is prepared by competent experts;*
- (b) the competent authority shall ensure that it has, or has access as necessary to, sufficient expertise to examine the environmental impact assessment report; and*
- (c) where necessary, the competent authority shall seek from the developer supplementary information, in accordance with Annex IV, which is directly relevant to reaching the reasoned conclusion on the significant effects of the project on the environment.*

Member States shall, if necessary, ensure that any authorities holding relevant information, with particular reference to Article 3, make this information available to the developer.

(Article 5(3) and (4) of the EIA Directive)

Box 14

Use of licenced experts for appropriate assessment in Czechia

In the Czechia, only licensed experts are allowed to carry out appropriate assessments (AA). The licensing system is anchored in the Act on Nature Protection and details are specified in a ministerial decree. The first basic criterion for obtaining a license is to have a degree in biology or ecology or state exam in ecology. No derogation from this rule is allowed as experience from the field has shown that knowledge of ecology is an essential prerequisite for correct assessments.

The authorisation exam consists of a written test on ecology, zoology, botany and national law (the latter is linked to AA and EIA/SEA issues) and an oral presentation of a case study. The exams take place approximately twice a year and the standard is set rather high, with a special emphasis on knowledge in ecology. Successful candidates are granted a license by the Ministry of Environment (MoE) for 5 years.

The licensing scheme has had a positive spin-off in terms of making improvements to the overall AA process. The licensed assessors organise regular meetings to share experiences and discuss difficult cases. In view of this the Ministry of Environment commissioned a number of practical guidance documents from them to improve the AAs and ensure a consistent approach.

Regardless of whether Article 6(3) is complied with through existing environmental impact assessment procedures or other specific approaches, the results of Article 6(3) assessments should allow full traceability of the decisions eventually made.

Box 15

Elements for ensuring quality of the appropriate assessment

The assessment:

- considers all elements contributing to the Natura 2000 site's integrity as indicated in the site's conservation objectives, management plan (where available) and Standard Data Form and the importance of habitats and species concerned in the context of network, and is based on best available scientific knowledge in the field;
- considers the role of the site and its function within the biogeographical region and the ecological coherence of the Natura 2000 network;
- includes a comprehensive identification of all the potential impacts of the plan or project likely to be significant on the site, taking into account cumulative impacts likely to arise as a result of the combined effects of the plan or project under assessment with other plans or projects;
- if appropriate, incorporates effective mitigation measures into the plan or project, in order to avoid, reduce or even cancel the negative impact on the site;
- applies the best available techniques and methods to estimate the extent of the effects of the plan or project on the ecological integrity of the site(s);
- includes the robust indicators to monitor the plan or project implementation.

To meet the requirements of the Article 6(3) assessment, the Natura 2000 authorities may draw up formal specifications on the type of information and criteria to follow when carrying out the appropriate assessment.

It is highly recommended that good practice sharing and training be given to all those concerned by the appropriate assessment (e.g. relevant statutory authorities at all levels of government, consultants, project or plan developers).

Box 16

Example of contents of the appropriate assessment report**Description of the plan or project**

Aim, scope, location, main activities

Natura 2000 sites likely to be affected and their conservation objectives

Outline of the Natura 2000 sites likely to be affected, the species and habitats for which they are designated and their conservation condition, as well the conservation objectives of the sites.

Assessment of the effects of the plan or project on the integrity of the site

- *Describe the elements of the plan or project (alone or in combination with other projects or plans) that are likely to cause significant effects on the Natura 2000 site (use outcomes of the screening assessment).*
- *Describe how the plan or project will affect species and habitats protected in the site, and the implications for the site's conservation objectives (e.g. loss of habitat, fragmentation, disturbance to species, mortality of species, chemical changes, hydrological or geological changes). Acknowledge uncertainties and any gaps in information.*
- *State whether the integrity of the site will be affected by the plan or project or not.*
- *Acknowledge uncertainties and any gaps in information.*

Mitigation measures

- *Describe what mitigation measures are to be introduced to avoid or reduce the adverse effects on the integrity of the site and demonstrate their effectiveness in reducing the impact below significance.*
- *Acknowledge uncertainties and any gaps in information.*
- *Outline intended monitoring.*

Conclusion

State whether the integrity of the site might or will be affected by the plan or project or that it certainly will not (having regard to the precautionary principle).

Sources used when drawing up the appropriate assessment

Indicate sources of information used

Results of consultation

Name of agencies, bodies or experts consulted

Summary of responses

Access to justice

The Court of Justice of the European Union has also recognised the right of the public, which includes environmental organisations, to challenge the appropriate assessment decisions taken by authorities (Case C-243/15, paragraphs 56-61), including on the validity of the conclusions drawn from the assessment as regards the risks of that plan or project for the integrity of the site.

3.3. Stage 3: Procedure under Article 6(4)

Article 6(4) allows for exceptions to the general rule of Article 6(3) but its application is not automatic. It is up to the authority to decide whether a derogation from Article 6(3) can be applied. Article 6(4) must be applied in the sequential order established by the Directive – that is, after all the provisions of Article 6(3) have been undertaken in a satisfactory manner.

See further details in the Article 6 Guide – section 5.2.

Plans or projects for which the appropriate assessment could not conclude that they will not affect the integrity of the sites concerned may only be approved by the competent authorities if a derogation is sought in accordance with the provisions of Article 6(4).

These provisions entail three key requirements that must be met and documented:

1. alternatives have been considered and it can be demonstrated that the alternative put forward for approval is the least damaging for habitats and species and for the integrity of the Natura 2000 site, and that no other feasible alternative exists that would not adversely affect the integrity of the site;
2. there are imperative reasons of overriding public interest, including 'those of a social or economic nature';
3. all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected are taken.

These three main requirements are discussed in the following sections.

3.3.1. **Step 1: Examining alternative solutions**

It is for the competent national authorities to ensure that all feasible alternative solutions that meet the plan/project aims have been explored to the same level of detail. This assessment should be made against the species and habitats for which the site has been designated and the site's conservation objectives.

The absence of alternatives must be demonstrated before examining whether the plan or project is necessary for imperative reasons of public interest (Court ruling in Castro Verde Case C-239/04 paragraphs 36-39).

See further details in the Article 6 Guide – section 5.3.1.

The first obligation of the Article 6(4) procedure is to examine whether there are alternative solutions to the plan or project. Alternative solutions could refer to an alternative design of the project (e.g. different routing of a road or different number of lanes). They could also refer to broader options to achieve the same overall objective, e.g. a rail connection improvement could be considered as an alternative to a new road, a wind energy development as an alternative to a hydro power plant.

Examining alternative solutions under Article 6(4) involves the following tasks:

- identification of alternative solutions;
- comparative assessment of the alternatives considered;
- justification of the absence of alternatives that are feasible for consideration under Article 6(4) (if applicable).

(a) **Identification of alternative solutions**

The first task is to review possible alternatives that could exist for achieving the objectives of the plan or project. Crucial is the consideration of the 'do nothing' scenario, also known as the 'zero' option, which provides the baseline for comparison of alternatives.

The alternatives may consist of different:

- ways to achieve the objectives of the proposed development;
- locations that may be available for the development having regard to protected habitats and species, for example, by defining different land transportation corridors in master plans for roads and motorways or different housing development zones;
- scale and size of the development;
- design solutions for the development;

- techniques, methods of construction or operational methods for the implementation of the development;
- timetable of the various activities and tasks at each of the implementation stages, including during construction, operation, maintenance and, if applicable, decommissioning or reconditioning.

Nature-based solutions (as opposed to traditional 'grey infrastructure') can often be equally viable and less detrimental to Natura 2000 sites. For example restoring a more natural river bed with adjacent wetlands can ensure similar or better flood protection than artificial dykes and/or reservoirs, while at the same time exerting significantly less impact on protected habitats and species or even improving their condition. Hence such alternatives should be given due consideration during the analysis of available options.

In the case of plans, national or regional policies and strategies, and other documents setting out sectoral policies (e.g. on renewable energy or other infrastructure development) provide a framework for assessing the range and type of possible alternative solutions. The plan-making process is particularly suitable for analysis of alternatives, as it is an iterative process capable of providing solutions that protect Natura 2000 sites and ensure the sustainable development of activities to meet society's needs.

Alternatives should be considered for all components, activities and operations of the plan which have been identified as adversely affecting the integrity of Natura 2000 site(s).

As discussed in section 3.2.6, in the case of plans, certain components or actions of the plan may be insufficiently defined, placing limitations on the assessment of alternatives. Nonetheless, reasonable alternatives should still be identified, described and evaluated, taking into account the plan or programme's objectives and geographical scope. This is also required by the SEA Directive (Article 5).

It can be easier to implement Article 6(4) procedures if the plan or project developers discuss possible alternatives with the competent authorities and/or statutory nature authorities at an early stage in the process.

A suitable framework for finding alternatives is provided by the procedures for public consultation such as those laid down in the SEA and EIA Directives.

(b) *Comparative assessment of the alternatives considered*

It is the responsibility of competent authorities to evaluate the relative impact of the alternative solutions with a view to justifying a decision under Article 6(4). The competent authorities must determine whether the alternative put forward for approval is the least damaging for habitats and species and for the integrity of the Natura 2000 site or sites concerned. The assessment of alternative solutions is necessary even if the investment is already justified in advance for imperative reasons of overriding public interest, e.g. through national law.

The various alternatives must be compared in light of their effects on the habitats and species significantly present on the site as well as their conservation objectives, and on the integrity of the site and its importance for the ecological coherence of the Natura 2000 network.

The identified impacts of each alternative must be fully and precisely described and quantified as far as possible in terms of the following (non-exhaustive list) and in view of the site-specific conservation objectives:

- Natura 2000 sites affected;
- area of habitat loss and degradation;
- population numbers of affected species;
- deterioration of important functions;
- disturbance;
- displacement of species populations.

This should provide the basis for comparing alternatives and for determining which alternatives are the least damaging for Natura 2000 sites and the species and habitats that are significantly present therein, in view of the site-specific conservation objectives. This needs to be identified based on a set of qualitative and quantitative criteria.

In a second phase, other criteria such as social considerations and the economic cost of the alternatives analysed may be considered in the choice of alternative solutions.

The economic cost of the steps that may be considered in the review of alternatives cannot be the sole determining factor in the choice of alternative solutions. In other words, a project developer cannot claim that alternatives have not been examined because they would cost too much.

(See the Article 6 Guide – section 5.3.1)

Tasks to be carried out in assessing alternatives are summarised in Box 17.

Box 17

How to assess alternative solutions

- consult relevant agencies and organisations;
- make use of the information gathered to complete the screening and appropriate assessment stages of the Article 6(3) assessments;
- identify and characterise the key objectives of the plan or project, also in broad (strategic) terms ⁽³²⁾;
- identify all alternative means of meeting the objectives of the project or plan;
- provide as much information as possible, acknowledge gaps in information, and provide sources of information;
- assess the impacts (in a qualitative and quantitative way) of each alternative on the conservation objectives of the site.

A matrix for the identification and assessment of alternatives is presented in Table 10 below. The matrix can also be used to report on the results of the assessment of alternatives.

⁽³²⁾ The objectives of a plan or project should be analysed not only in relation to one specific technology but rather in relation to achieving a certain goal (e.g. for a hydropower plan or project the objective should be analysed in terms of 'producing x MW of renewable energy', so that the possibilities of using other technologies can be assessed as well (e.g. wind, solar or geothermal energy).

Table 10

Assessment of alternative solutions matrix

<i>Assessment of alternative solutions</i>		
The description and objectives of the plan or project		The 'do nothing' scenario
Predicted adverse effects of the plan or project on the Natura 2000 site based on the appropriate assessment		
<i>Comparison with plan or project</i>		
Possible alternative solutions	Evidence of how the alternative solutions were assessed	Describe the relative effects on the conservation objectives of Natura 2000 (greater or less adverse effects)
<i>Alternative locations/routes</i>		
Alternative 1		
Alternative 2		
Alternative 3		
<i>Alternative size and scale</i>		
Alternative 1		
Alternative 2		
Alternative 3		
<i>Alternative means of meeting objectives (e.g. demand management)</i>		
Alternative 1		
Alternative 2		
Alternative 3		
<i>Comparison with plan or project (cont.)</i>		
Possible alternative solutions	Evidence of how the alternative solutions were assessed	Describe the relative effects on the conservation objectives of Natura 2000 (greater or less adverse effects)
<i>Alternative methods (construction, operational, decommissioning)</i>		
Alternative 1		
Alternative 2		
Alternative 3		

	<i>Alternative timescales</i>	
Alternative 1		
Alternative 2		
Alternative 3		
<i>Conclusions on assessment of alternatives</i>		

Box 18 below summarises examples of alternatives that have been considered in the context of notifications for Commission opinions in accordance with Article 6(4) of the Habitats Directive ⁽³³⁾.

Box 18

Examples of alternatives considered under Article 6(4) procedure

Case 1. Deepening and widening of the ship fairway of a river

The project involved the deepening and widening of the ship fairway of the River Main along the Wipfeld, Garstadt and Schweinfurt sections in Bavaria, Germany.

The appropriate assessment concluded that there would be significant impact on two Natura 2000 sites and two habitat types would be damaged directly, involving a surface loss of 9 460 m² for priority habitat 91E0* and 6 440 m² for habitat 6510.

Three alternatives were examined in addition to the zero alternative. The latter showed the importance of the river transportation objectives. One of the alternatives was discarded because it would negatively affect another Natura 2000 site and would lengthen both the construction time and the spatial extent of the project. Another alternative was rejected because, although it would have less adverse ecological impact, it would not improve the river's nautical characteristics, which is one of the project's objectives.

The alternative selected would create a continuous navigation channel with uniform minimum width and depths and was mainly limited to the existing riverbed. Although it would affect the two habitat types of Community interest mentioned above, the competent authorities considered that the proposed solution achieved the best balance between ecological and river transportation objectives. The loss of the habitats would be adequately compensated.

Case 2. Long-distance and suburban railway connection

The project concerned a long-distance and suburban railway connection from Bad Cannstatt to Stuttgart (Germany). It would significantly affect a Natura 2000 site, which holds an important habitat for the hermit beetle (*Osmoderma eremita*), a protected priority species.

The authorities examined route alternatives covering the entire section, parts of the section and the 'zero' option. The latter would not meet the project criteria of linking Stuttgart and Bad Cannstatt stations and renovating the railway bridge over the River Neckar. All the other alternative solutions would significantly affect the Natura 2000 site, including zones with the priority species, and their comparison showed that some would cover a larger area of the Natura 2000 site than the one selected or would lead to clearing a larger number of trees which provide potential habitats for the species. The proposed solution therefore offered the best balance between ecological and economic objectives.

Case 3. Construction of a new port

The project concerned the construction of a new port in Granadilla, Tenerife, Canary Islands. The project would adversely affect two Natura 2000 sites designated for the loggerhead sea turtle (*Caretta caretta*), a priority species, and for a priority habitat type 2130 (fixed coastal dunes with herbaceous vegetation 'grey dunes').

The Spanish authorities studied several alternatives, including the option of not developing more port capacity (the 'zero option') as well as the further expansion and development of the existing port in Santa Cruz. The zero option was discarded because the existing port facilities would not be able to handle the expected increase in maritime traffic and because increased port capacity was necessary for the island's economic development. Expansion of the existing port facilities in Santa Cruz would not be possible for a number of technical reasons. Other alternative locations could not be chosen because of different factors such as the depth of the seabed at the shore, the lack of a quarry close enough to the envisaged site, availability of free adjacent land for handling and logistics operations, adequacy of transport connections with the hinterland and proximity to port users.

⁽³³⁾ <https://ec.europa.eu/environment/nature/natura2000/management/opinionen.htm>

(c) **Outcomes – justification of the absence of alternatives**

Once the assessment of alternative solutions is complete, a record should be made of all the alternatives that have been considered, the results of their assessment and the agencies and other bodies that were consulted. The purpose is to determine whether or not it can be objectively concluded that there are no alternative solutions. If alternative solutions have been identified that will either avoid any adverse impacts or result in less severe impacts on the site, it will be necessary to assess their potential impact through an appropriate assessment. On the other hand, if it can be reasonably and objectively concluded that there are no alternatives, it will be necessary to proceed to the next step in the Article 6(4) procedure.

3.3.2. **Step 2: Examining imperative reasons of overriding public interest (IROPI)**

In the absence of alternative solutions with no adverse effect on the integrity of the Natura 2000 site concerned or in the presence of solutions having even more negative environmental effects on the site, the competent authorities must examine whether there are imperative reasons of overriding public interest, including those of a social or economic nature, that would justify the realisation of the plan or project in question.

The concept of 'imperative reason of overriding public interest' is not defined in the Directive. However, Article 6(4) second subparagraph mentions human health, public safety and beneficial consequences of primary importance for the environment as examples of such imperative reasons of overriding public interest.

As regards the 'other imperative reasons of overriding public interest' of social or economic nature, it is clear from the wording that only public interests, irrespective of whether they are promoted either by public or private bodies, can be balanced against the conservation aims of the Directive. Thus, projects developed by private bodies can only be considered where such public interests are served and demonstrated.

It is reasonable to consider that the 'imperative reasons of overriding public interest, including those of social and economic nature' refer to situations where plans or projects envisaged prove to be indispensable:

- *as part of actions or policies to protect fundamental values for the life of citizens (health, safety, environment);*
- *as part of fundamental policies for the State and society;*
- *as part of the performance of activities of an economic or social nature, fulfilling specific public service obligations.*

It is for the competent authorities to weigh up the imperative reasons of overriding public interest of the plan or project against the objective of conserving natural habitats and wild fauna and flora. They can only approve the plan or project if the imperative reasons for the plan or project outweigh its impact on the conservation objectives.

See the Article 6 Guide – section 5.3.2.

When determining IROPI, a competent authority must consider all of the elements, i.e. whether it is :

- **imperative:** the plan or project serves an essential public interest, rather than private interests;
- **overriding:** the interest served by the plan or project outweighs the harm (or risk of harm) to the integrity of the site as identified in the appropriate assessment;
- **of public interest:** for instance it is a fundamental part of public policies for the State and society.

Public interests can occur at national, regional or local level, but, whatever the level, the other elements of the test must also be met. In practice, plans and projects which are consistent with national or regional strategic plans or policies (e.g. identified within a national infrastructure plan) are more likely to be of public interest. However, consideration would still need to be given to whether, in a specific case, that interest outweighs the harm that will be done to the affected sites and therefore whether IROPI can be demonstrated. Plans or projects that fall outside national strategic plans, including those at a lower geographic scale, may also be able to show IROPI.

IROPI must be assessed on a case-by-case basis in light of: (i) the objective of the particular plan or project; and (ii) its particular impact on the Natura 2000 sites affected as identified in the appropriate assessment.

Weighing up IROPI against conservation objectives

The description of the plan or project objectives may already include elements that can be used to assess the presence of IROPI. This assessment, like the one dealing with the identification of less harmful alternatives, requires a weighing up any IROPI against the damage caused to the Natura 2000 site as a result of implementing the plan or project under consideration, in view of its conservation objectives and taking into account also the overall importance of the site for the species and habitats for which it is designated.

The more important or vulnerable the conservation values of the site affected, the more restrictive the scope will be for IROPI to be considered acceptable and for the damage to the site, as determined by the appropriate assessment, to be justifiable.

Where a priority natural habitat type or a priority species is affected, the only considerations which may be raised as IROPI under Article 6(4) of the Habitats Directive are those relating to human health or public safety, or to beneficial consequences of primary importance for the environment. If other IROPI are evoked, a Commission opinion is required.

Elements underpinning the case for IROPI can be included to a certain extent in the description of plans or programmes, in particular in the statement of the objectives motivating the development action. Such reasons must also be specified in a formal decision at the appropriate level of government (e.g. regional, national) and be clearly documented.

The consideration of IROPI may be inherent to the strategic planning of certain policy areas (e.g. flood risk management), which are relevant to human health, public safety or the protection of public goods. For activities likely to be justified for IROPI, the need to consider alternatives and compensation can thus be taken into account at an early stage in the planning process (see example in Box 20 below).

Examples of IROPI applied in the context of requests for Commission opinions under Article 6(4) of the Habitats Directive ⁽³⁴⁾ are set out in Box 19 below.

Box 19

Examples of IROPI under Article 6(4)

Case 1 Deepening and widening of a ship fairway ⁽³⁵⁾

The River Main is part of the Trans-European Network (TEN) and is the only inland waterway connecting several Member States to the south-east of Europe. It has important functions as a cross-border route for goods connecting Rotterdam (NL) and Constanța (RO) and is therefore of economic importance.

The project is one of the last missing links needed to adjust this fairway to new political and economic developments and to the requirements of an enlarged European Union. Currently, this part of the River Main creates a bottleneck of 30 km where ships are still limited in terms of their width and depth.

⁽³⁴⁾ https://ec.europa.eu/environment/nature/natura2000/management/opinion_en.htm

⁽³⁵⁾ Commission Opinion C(2013) 1871 final 5.4.2013 <http://ec.europa.eu/environment/nature/natura2000/management/docs/Commission%20Opinion%20Main%20EN%20SEC-2013-1871.pdf>

Case 2. Long-distance and suburban railway connection ⁽³⁶⁾

According to the authorities, the project will improve regional and long-distance passenger transport services, creating and strengthening cross-regional links to other development areas. It would be part of a ring system necessary to improve railway transport in the region. It would also involve the rebuilding of a bridge crossing which is more than 100 years old.

Case 3. Construction of a new port ⁽³⁷⁾

The island of Tenerife (Canary Islands, Spain) is highly dependent on maritime transport and an efficient port system. The main port, currently located in the capital, is experiencing increasing congestion.

The new port would add much needed capacity to: (i) accommodate future growth in maritime traffic, especially in relation to container traffic, which is forecast to increase significantly on the island; and (ii) de-congest the existing port. The new port is expected to generate a sound economic rate of return and will also provide the island with the possibility of attracting international container transshipment traffic.

3.3.3. Step 3: Identification, assessment and adoption of compensatory measures

Once it has been fully ascertained and documented that there are no alternatives less harmful to the site and that IROPI is justified, all compensatory measures to ensure the protection of the overall coherence of the Natura 2000 network must be taken.

The compensatory measures constitute measures specific to a plan or project, additional to the normal duties stemming from the Birds and Habitats Directives. These measures aim to offset precisely the negative impact of a plan or project on the species or habitats concerned. They constitute the 'last resort' and are used only when the other safeguards provided for by the Directive are exhausted and the decision has been taken to consider a plan/project as nonetheless having a negative impact on the integrity of a Natura 2000 site or when such an impact cannot be excluded.

Compensation should refer to the Natura 2000 site's conservation objectives and to the habitats and species negatively affected in comparable proportions in terms of quality, quantity, functions and status. At the same time, the role played by the site concerned in relation to the biogeographical distribution has to be replaced adequately.

See the Article 6 Guide – section 5.4.

(a) Main types of compensatory measures

Compensatory measures in the context of Article 6(4) of the Habitats Directive should: (i) be specific to the plan or project under consideration; and (ii) go beyond the measures required for the designation, protection and management of Natura 2000 sites, as set out in the conservation objectives for the site.

The following *cannot* be considered as compensatory measures: (i) the implementation of a management plan for the site; (ii) measures for improving the conservation status of a habitat type on a site that are already planned irrespective of the plan/project; or (iii) the designation as special area of conservation of an area already identified as being of Community importance. Instead, compensatory measures should be additional to the conservation measures that need to be established and implemented in a Natura 2000 site and additional to other protection provisions required by the Habitats and Birds Directives or obligations laid down in EU law.

⁽³⁶⁾ Commission Opinion C(2018) 466 final of 30.1.2018 <https://ec.europa.eu/environment/nature/natura2000/management/docs/C2018466F1COMMISSIONOPINIONENV5P1961037.pdf>

⁽³⁷⁾ Opinion of the Commission in relation to the construction project of the new port of Granadilla (Tenerife), 2006. <https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/granadillaen.pdf>

Examples of types of compensatory measures, along with accompanying measures that can enable and facilitate their implementation, are presented in Table 11 below. It is important to note that all of these **measures have to go over and beyond the normal obligations** under the Birds and Habitats Directives, including those related to the designation, management and restoration of the sites.

Table 11

Examples of types of compensatory measures suitable for Article 6(4)

Compensatory measure	Description
Habitat restoration or enhancement in existing sites	Increasing the habitat area in the site concerned or restoring the habitat in another Natura 2000 site, in proportion to the loss due to the plan or project, if this is not already foreseen in the site-specific conservation objectives.
Habitat recreation	Creating or restoring a habitat on a new or enlarged site, to be incorporated into the Natura 2000 network in view of its protection/management.
Designation of a new site for the Natura 2000 network with implementation of accompanying management measures	Designating a new site of sufficient quality under the Birds or Habitats Directives and implementing the appropriate protection and conservation measures.
Species reintroduction, recovery and reinforcement, including reinforcement of prey species	Reintroduction of species into sites where the species have disappeared (provided the scientific soundness of such a reintroduction), or re-stocking species populations in areas where they are declining, and subsequently protecting and managing those sites for the benefit of the species.
Possible accompanying measures	Description
Land purchase and establishing/implementing the appropriate protection and conservation measures	Acquiring an area of land for nature conservation and establishing/implementing the appropriate protection and conservation measures.
Rights acquisition for nature conservation and establishing/implementing the appropriate protection and conservation measures	Acquiring management rights over an area of land or sea and establishing/implementing the appropriate protection and conservation measures.
Reserve creation	Setting restrictions in the use of an area of land or sea, beyond those required to comply with other provisions of the Birds and Habitats Directives.
Reduction of threats	Reduction in (other) threats, either through action on a single source or through coordinated action on all threat factors.

The possibility of designing and implementing effective compensation measures will vary in function of the different habitats and species concerned and local conditions. While there are many good examples of the successful restoration or creation of new habitats for wetland birds or for amphibian reproduction, for many species and habitats effective techniques for restoration are still not well-known or available.

In all cases, the restoration and recreation of ecosystems and habitats of species for compensation purposes must be based on sound knowledge of restoration ecology ⁽³⁸⁾.

⁽³⁸⁾ Relevant sources include scientific journals or dedicated websites (e.g. <http://www.restorationevidence.org/>), as well as restoration projects supported by the LIFE programme (available at: <https://ec.europa.eu/easme/en/life>).

In some cases, adequate compensation through restoration may not be possible. This can be the case, in particular, in the following situations:

- Where localities crucial for endangered species or habitat types are to be destroyed but cannot be replaced by similar key locations (e.g. suitable locations that play a similar role in the species range than the ones affected).
- Where restoration is not feasible, either because it would require an extremely long time (e.g. a bog would require a few thousand years to be effectively restored), or due to the current lack of knowledge on the restoration ecology of the species or habitat type (e.g. this could be the case for limestone springs or natural alkaline fens).

When there is no guarantee of the effective restoration or reinstatement of damaged habitats and species, compliance with Article 6(4) is not ensured. In the situations described above, however, it may still be possible, as a compensatory measure, to designate, protect and manage a new site hosting a suitable area of the same habitat(s) affected (see above in Table 12).

(b) Guiding principles for setting compensatory measures and targets

The main aim of compensatory measures under Article 6(4) is to maintain the overall coherence of the Natura 2000 network. Consequently, two aspects that determine the design and implementation of compensatory measures must be addressed: *proportionality* and *ecological functionality*.

These two principles set the scope and level of ambition of the measures required to compensate the plan or project's adverse effects. Compensation measures should also aim to outweigh the worst-case scenarios of likely adverse effects.

In order to ensure the overall coherence of Natura 2000, the compensatory measures proposed for a project should therefore: (a) address, in comparable proportions, the habitats and species negatively affected; and (b) provide functions comparable to those which had justified the selection criteria for the original site, particularly regarding the adequate geographical distribution. Thus, it would not be enough for the compensatory measures to concern the same biogeographical region in the same Member State.

The distance between the original site and the place of the compensatory measures is not necessarily an obstacle as long as it does not affect the site's functionality, its role in the geographical distribution and the reasons for its initial selection.

See further details in the Article 6 Guide – section 5.4.2.

Proportionality of the compensatory measures

Maintaining the overall coherence of the Natura 2000 network means ensuring that the compensatory measures proposed address the habitats and species in proportions comparable to the adverse effects caused on the site. The competent authorities must therefore determine the relative importance of the Natura 2000 features affected and the negative impacts on them according to quantitative and qualitative criteria. This sets the baseline for compensation.

Compensation ratios are best set on a case-by-case basis. They must be initially determined in the light of the information from the Article 6(3) appropriate assessment and must ensure ecological functionality. The ratios may then be redefined according to the results observed when monitoring the effectiveness. The final decision on the proportion of compensation must be justified.

There is wide acknowledgement that ratios should be generally well above 1:1. Thus, compensation ratios of 1:1 or below should only be considered when it is shown that with such an extent the measures will be fully effective in reinstating structure and functionality within a short period of time (e.g. without compromising the preservation of the habitats or the populations of key species likely to be affected by the plan or project or their conservation objectives).

See further details in the Article 6 Guide – section 5.5.4.

Ecological functionality and location of the compensatory measures

In addition to the need to address, in comparable proportions, the habitats and species negatively affected, compensation must also provide ecological functions comparable to those which had justified the selection of the Natura 2000 site in the first place.

The scope of compensatory measures is determined by the specific requirements for reinstating certain ecological functions and structures that are either likely to be lost or subject to degradation as a result of the plan or project implementation. Special attention must be paid to habitat types or habitats of species that need a long time to reach the same level of ecological functionality.

There is general agreement that the local conditions necessary to reinstate the ecological assets at stake are found as close as possible to the area affected by the plan or project. Therefore, locating compensation within or near the Natura 2000 site concerned where suitable conditions for the measures to be successful seems the most preferred option. However, this is not always possible and a range of priorities should therefore be applied when searching for locations that meet the requirements of the Habitats Directive:

- 1) Compensation within the Natura 2000 site, provided the necessary elements to ensure ecological coherence and network functionality exist within the site.*
- 2) Compensation outside the Natura 2000 site concerned, but within a common topographical or landscape unit, provided the same contribution to the ecological structure and/or network function is feasible. The new location can be in another designated Natura 2000 site or a non-designated location. In the latter case, the location must be designated as a Natura 2000 site and be subject to all the requirements of the Nature Directives.*
- 3) Compensation outside the Natura 2000 site, in a different topographical or landscape unit. The new location can be another designated Natura 2000 site. If compensation takes place on a non-designated location, this location must then be designated as a Natura 2000 site and be subject to all the requirements of the Nature Directives.*

See further details in the Article 6 Guide – section 5.5.5.

Box 20 below provides a simplified example for defining the scope of compensatory measures in relation to ecological functions.

Box 20**Defining the scope of compensatory measures in relation to ecological functions – example in a special protection area**

Ecological function affected by a plan or project: resting areas for migratory bird species heading northwards, located in an SPA.

Focus of compensatory measure:

- (a) The compensatory measures must provide alternative resting areas for the populations of the migratory bird species.
- (b) The new suitable resting areas for the targeted species must be correctly located in the same migratory path.
- (c) The new suitable resting areas must be readily accessible to the birds that use the original Natura 2000 site affected by the project ⁽³⁹⁾. The carrying capacity of the new habitat must be at least equal to the carrying capacity of the site affected. The new resting areas should be protected before that project is implemented.

New resting areas for the same species but in locations out of the migratory path, or within the migratory path but far away from the resting spot affected, would not be a suitable compensatory measure. This is because the ecological functionality recreated would not be sufficient to ensure the ecological coherence of the network.

⁽³⁹⁾ The location of the site must be sufficiently close to avoid that the species has to expend extra energy in getting to the new site, which may in turn reduce its resilience and increase its vulnerability.

A summary checklist of key issues to consider when designing compensatory measures is included at this end of this chapter (Table 15).

(c) **Timing of compensation**

Time is a crucial dimension in the planning of compensatory measures as they should be in place, fully operational and effective before the damage on the site occurs.

Timing the compensatory measures calls for a case-by-case approach. The schedule adopted must provide continuity in the ecological processes essential for maintaining the structure and functions that contribute to the overall coherence of the Natura 2000 network. This requires tight coordination between the implementation of the plan or project and the implementation of the compensatory measures. It also depends on issues such as the time required for habitats to develop and/or for species populations to recover or establish in a given area.

In addition, other factors and processes must also be considered.

- *A site must not be irreversibly affected before compensation is in place.*
- *The result of compensation should be operational at the time the damage occurs on the site concerned. Under certain circumstances where this cannot be fully achieved, overcompensation would be required for the interim losses.*
- *Time lags might only be admissible when it is ascertained that they would not compromise the objective of 'no net losses' to the overall coherence of the Natura 2000 network.*
- *Time lags must not be permitted, for example, if they lead to population losses for any species protected on the site under Annex II to the Habitats Directive or Annex I to the Birds Directive; priority species listed in Annex II to the Habitats Directive merit special attention.*
- *It may be possible to scale down in time compensatory measures, depending whether the significant negative effects are expected to arise in the short, medium or long term.*

Specific measures to outweigh interim losses that would occur until the conservation objectives are met may be advisable. All technical, legal or financial provisions needed to implement the compensatory measures must be completed before the plan or project implementation starts, so as to prevent any unforeseen delays that may hinder the effectiveness of the measures.

See further details in the Article 6 Guide – section 5.5.6.

The time required for upgrading, restoring or reinstating ecological functionality depends on the biology and ecology of the habitats and species. This needs therefore to be assessed on a case-by-case basis and may require investigation or searching for evidence of restoration from similar situations.

An example of the possible time lag taken to restore grassland communities is provided in Box 21 below.

Box 21

Time necessary to restore grassland communities

22 studies from 7 European countries include information on the length of time taken to restore grassland communities. This includes 16 replicated trials, of which 9 were also controlled and 3 were reviews. There were 6 studies that saw positive signs of restoration in less than 5 years, 11 studies within 10 years, and 2 studies found restoration took more than 10 years. Six studies found limited or slow changes in plant communities following restoration.

Source: Restoration Evidence. Action: Restore/create species-rich, semi-natural grassland. <http://www.restorationevidence.org>

(d) **Evaluation and monitoring of compensatory measures under Article 6(4)**

To comply with the obligation to maintain the coherence of the Natura 2000 network, the programme of compensatory measures under Article 6(4) must demonstrate their effectiveness and provide documentation for this.

Geographical location, extent and timing are all determining factors for successful compensation. Adequate compensation ratios are also crucial to ensure effectiveness of compensation before the plan or project impacts appear.

The design and implementation of the compensatory measures must be **comprehensive** and **scientifically sound**, i.e.:

- The conservation objectives, key features and ecological functionality to be compensated are targeted in the correct proportion.
- The accompanying measures required, including technical, administrative and financial, have been incorporated.
- The timetable for implementing the individual tasks within each measure, including provision for maintenance works and monitoring, is sufficiently detailed.
- The scientific basis proving the effectiveness of each compensatory measure is explained and evidenced specifically for the impact it aims to offset.
- The time scale for accomplishing the expected results from each of the proposed measures is stated.
- The prioritisation of the measures' implementation is justified based on the Natura 2000 conservation objectives and scientific evidence.

Some critical elements for effective compensation measures in relation to their location, timing and extent are presented below. Examples of how these elements have been applied in practice are provided in Section 3 of the Annex.

Table 12

Key elements for effective compensatory measures

Location	Must make it possible to maintain the overall coherence of the Natura 2000 network.
	Should host – or be able to develop – the specific features, structure and functions required for compensation according to the results of the appropriate assessment.
	Must give proper consideration to qualitative ecological aspects such as the uniqueness of the features that will be impaired.
	Must be determined through careful analysis of local ecological conditions so that compensation is both feasible and as close as possible to the area affected by the plan or project.
	Must be within the same biogeographical region (for sites designated under the Habitats Directive) or within the same range, migration route or wintering area for bird species (i.e. sites designated under the Birds Directive) in the Member State concerned.
Extent	Is determined by: <ul style="list-style-type: none"> — the extent of the plan or project's negative effects on the key features and ecological processes, which undermine the integrity of the Natura 2000 site; — scientific evidence of the measures' capacity to achieve the expected results for maintaining the overall coherence of the Natura 2000 network.
	Is best set on a case-by-case basis, according to the information generated in the appropriate assessment under Article 6(3).
	Is initially set with the aim of outweighing the worst-case scenarios of likely adverse effects.
	Is ascertained by monitoring and reporting on ecological functionality outcomes.

Timing	Must ensure the continuity of the ecological processes essential for maintaining the structure and functions that contribute to the overall coherence of the Natura 2000 network.
	Considers the coordination required between implementing the plan or project and implementing the compensatory measures.
	Is determined by the time required for habitats to develop and/or for species populations to recover or establish in a given area.
	Must include legal safeguards required for long-term implementation and the protection, monitoring and maintenance of the sites to be secured before impacts on habitats and/or species occur.
	May require the application of specific measures to outweigh interim losses that would occur until the conservation objectives are met.
	Requires the establishment of robust and complete monitoring programmes capable of assessing the success of compensation measures.

The delivery of effective compensation should be verified through adequate **monitoring**.

Effective monitoring process may require the following elements:

- a monitoring plan agreed with the competent authority;
- contracting a specialised company or another entity to carry out the monitoring;
- identification of elements to be monitored: features of fauna and flora, water flows, soil quality, etc.;
- agreement on the reporting timeline (annual, biennial, etc.);
- agreement on the monitoring report;
- documentation of the progress of works (pictures, field reports, etc.);
- mechanism for storing and sharing the results;
- cooperation with scientists with a view to publishing the results of compensation in a scientific paper.

The monitoring and evaluation of compensatory measures must also allow for the possibility to factor in adverse negative effects on Natura 2000 sites that could not be foreseen in the appropriate assessment. Moreover, if the compensatory measures turn out not to be sufficient to outweigh these new impacts, they may need to be amended so that the ultimate aim of ensuring the overall coherence of the Natura 2000 network remains feasible.

Monitoring of compensation measures should be closely coordinated with the overall monitoring of impacts and mitigation measures (see section 3.2.4). This approach is consistent with the requirement in EU policy to coordinate monitoring programmes arising from different pieces of legislation, for an improved efficiency in their administration.

In some cases, adaptive management – which is a systematic approach for improving and adjusting conservation action by learning from management outcomes – may be required and secured through a legal agreement. In this context, adaptive management can be used to improve the implementation of compensatory measures where there may be uncertainties triggering the need for regular evaluation of the measures' actual outcomes. This is particularly relevant where the scale of impact and therefore the scale of compensation is not clear (e.g. when compensating for impacts arising from coastal flood defence development landward of a protected site).

(e) **Setting compensatory measures for plans**

At a plan stage, there may be some limitations to setting the necessary compensatory measures. The assessment and identification of adverse effects of a plan on the target features of certain Natura 2000 sites provides the basis for defining the need for compensatory measures. If there is enough certainty about the predicted effects on habitats, species or natural processes, and good knowledge about the extent and magnitude of those effects, it may be possible to define appropriate compensatory measures, identify the suitable location and an appropriate timing.

Nevertheless, detailed information about the effects of some of a plan's components may be missing from the plans themselves. In such cases, it may only be possible to define the kind of compensatory measures that will be necessary at the project level, e.g. to compensate the loss of certain habitats, or to provide additional habitats for certain species. As far as possible, a quantification of the needs should be provided, for instance surface area for habitat restoration.

In all cases, provision should be made to ensure that the necessary compensatory measures are defined, planned and implemented at the appropriate level. A provisional definition of the compensatory measures could be included in the plan. This should be accompanied by guidelines, criteria and approaches, which would require a more complete and detailed definition when the development of the plan allows for this task to be carried out.

Table 13 below provides an overview of issues relevant to the design, implementation and monitoring of the programme of compensation measures.

Table 13

Aspects to consider in the programme of compensatory measures for plans

Area of compensation:

- the location and surface areas of compensation (including maps); and
- the status and condition in the compensation areas.

Species and habitats subject to compensation:

- the former status and condition in the compensation areas of the species and the habitats subject to compensation; and
- an explanation of how the proposed compensatory measures are expected to outweigh the adverse effects on the integrity of the site and will make it possible to preserve the coherence of the Natura 2000 network.

Technical performance:

- techniques and methods implemented to put in place the proposed compensatory measures; and
- evaluation of their expected level of effectiveness.

Administrative provisions:

- completion of the administrative measures in place to ease implementation of the compensatory measures (e.g. any planning safeguards); and
- identification of any additional administrative measures that may be required to guarantee implementation of the compensatory measures to their full effectiveness.

Timing of compensation:

- time schedule for implementing the compensatory measures (considering long-term implementation – see the section below on cost), indicating when the expected results will be achieved;
- time schedule to convey monitoring results to the competent authorities; and
- time schedule for takeover of monitoring duties for the programme of compensatory measures.

Cost of compensation:

- real costs of the measures implemented;
 - cost deviations as compared to the cost planned in the programme of compensatory measures; and
 - any differentiation in time between costs depending on administrative coordination action (e.g. land purchase, one-off payments relating to rights on resource use; and/or regular payments towards specific recurring measures).
-

Table 14

Summary checklist of key issues to consider when designing compensatory measures

Action line	Description	Elements to include
Technical	Technical plan The activities to be undertaken with indication of their relevance according to: — the original site's conservation objectives; and — their relationship to the maintenance of the overall coherence of the Natura 2000 network.	Objectives and target values aligned to the site's conservation objectives
		Description of the compensatory measures proposed
		Demonstration of the technical feasibility of the measures in relation to their conservation objectives – ecological functionality
		Scientifically robust explanation of effectiveness of the activities in compensating the negative effects of the plan or project
		Prioritisation of activities according to the nature conservation aims – timetable aligned to nature conservation objectives
		Monitoring outline – per activity and overall
Financial	Financial plan The economic cost of implementing the programme of compensatory measures	Budget breakdown by cost category
		Budget breakdown by implementation timetable
		Demonstration of the financial feasibility of the measures according to the timing required and schedule for approval of the funds
Legal and administrative	Safeguards for nature conservation	Feasibility analysis of management rights: per type of activity and per suitable location (purchase, lease, stewardship, etc.)
		Demonstration of the legal and/or financial feasibility of the measures according to the timing required
		Identification of requirements for communication to the public
Coordination and cooperation – public authorities	Roles and responsibilities in implementation and reporting	Consultation, coordination and cooperation needs aligned to the timetable: agreement and approval of the compensatory programme by the Natura 2000 authorities, assessment authorities and the developer
		Monitoring plan based on progress indicators according to the conservation objectives, with reporting schedule and prospective links to existing assessment and monitoring obligations

4. STRATEGIC PLANNING AND APPROPRIATE ASSESSMENT OF PLANS

4.1. Strategic planning

An effective way to prevent conflicts with Natura 2000 sites and EU protected species and habitats is to consider the environmental consequences of new developments early on at strategic planning level. This can be done through a regional or national development plan for sectoral activities (e.g. in the energy sector, transport, extractive activities, aquaculture) or through land-use or other spatial plans. Having a strategic plan makes it possible to integrate environmental conditions and requirements, in particular those related to nature conservation, at an early planning stage so that the risk of potential conflicts later on at project level can be avoided or minimised and to determine the feasibility and means of implementing individual developments accordingly.

In the context of applying Article 6(3) and (4) of the Habitats Directive, strategic planning makes it much easier to consider the possible implications of planned activities on Natura 2000 sites at a broader scale and in a comprehensive way. In this way, the sites' sensitivities are taken into account at an early stage, when more options are available for meeting development objectives while at the same time reducing their potential environmental impacts. This will help, for example, in identifying suitable or unsuitable sites for specific activities and for minimising the risk of potential conflicts with Natura 2000 sites at individual project level.

Strategic planning can:

- promote a more interactive and transparent planning process and encourages early and iterative dialogue with relevant authorities, interest groups etc., which may significantly reduce the overall time required for the permitting procedure;
- provide a broader and more suitable framework for considering potential cumulative effects with other plans or projects, and feasible alternatives;
- help to avoid or reduce the number of potential site-specific conflicts at a later stage in the development process, when financial and legal resources have been committed and there is less room for manoeuvre;
- provide developers with relevant information and legal certainty about environmental concerns that may need to be considered already during the initial project concept;
- be more cost effective in the long run (if possible mitigation measures are factored in at an early planning stage, they are likely to be technically easier and cheaper to integrate);
- analyse broad alternatives, such as deployment of green infrastructure instead of 'grey infrastructure'; lead to the development of new, creative and innovative solutions (including nature-based) and potential win-win situations;
- contribute to improving the public image of the projects and the institutions responsible.

Examples of strategic planning relevant to Natura 2000 are provided in section 5 of the Annex to this document.

4.2. Appropriate assessment of plans

The overall procedural framework for the integration of environmental considerations at strategic planning level is set by the strategic environmental assessment (SEA), as stipulated in the SEA Directive ⁽⁴⁰⁾. According to Article 3(2)(b) of the SEA Directive, a plan has to undergo an SEA if it is deemed to require an appropriate assessment under the Habitats Directive (i.e. if the plan may have a significant effect on a Natura 2000 site ⁽⁴¹⁾).

⁽⁴⁰⁾ Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (OJ L 197, 21.7.2001, p. 30).

⁽⁴¹⁾ C-177/11, paragraph 24, also stating: 'The examination carried out to determine whether that latter condition is fulfilled is necessarily limited to the question as to whether it can be excluded, on the basis of objective information, that that plan or project will have a significant effect on the site concerned'.

Article 6(3) of the Habitats Directive applies to all plans that are likely to have a significant effect on Natura 2000 sites. As explained above and in the Article 6 Guide, the term 'plan' has a broad meaning, including land-use and maritime spatial plans ⁽⁴²⁾, as well as sectoral plans or programmes.

The assessment of such plans under Article 6(3) and their appropriate assessment follow the same steps as described in Chapter 3 of this document. However, there are also certain particularities in the assessment of plans, which are described further below. These particularities pertain to possible limitations and constraints and suitable approaches that can be used to overcome the difficulties and uncertainties linked with a lack of detailed information or insufficient definition of all the elements, components and actions of the plan.

The level of detail of the plan itself will determine the scope and extent of the appropriate assessment, but in all cases the assessment must aim to identify sensitive or vulnerable areas or other potential risks or conflicts with Natura 2000 sites so that these can be taken into account at later stages in the planning process.

For instance, municipal or urban plans may contain sufficient details that make it possible to determine potential adverse effects on Natura 2000 sites with a good level of certainty. On the other hand, for wider spatial or sectoral plans at regional or national level, where the location and design of all their main components are not yet decided, it may only be possible to identify potential effects of certain actions or components of the plan at a general level, without specifying them at site level. Nevertheless, wider plans can orientate further developments to areas where there is a lesser risk of potential conflicts with Natura 2000 (e.g. wildlife sensitivity maps.)

The assessment should be proportionate to the geographical scope, to the plan's level of detail and to the nature and extent of the likely effects. In some cases, it may not be possible to analyse in detail all the possible impacts on individual sites at this stage; however, sufficient analysis must be carried out to identify:

- the main impacts at the level of the Natura 2000 network, including the identification of Natura 2000 sites likely to be affected, as well as possible impacts on the connectivity of the sites, and in light of national or regional conservation objectives for species and habitats protected by the Birds and Habitats Directives, where they exist;
- possible broad mitigation measures such as exclusion of areas with sensitive biodiversity, or application of certain standards and best practices (e.g. minimum density of wildlife passages, use of noise screens, respecting breeding periods);
- possible alternatives, including different locations for projects or different methods to achieve the expected results (e.g. use of different modes of transport or technologies for production of energy);
- potential cumulative impacts, considering other existing or proposed plans, programmes and strategies.

For strategic plans where it is not possible to identify effects on individual sites, the analysis should as a minimum focus on potential impacts and major risks; site-specific effects will then need to be analysed at project level. In such cases, the appropriate assessment should focus at least on determining the Natura 2000 sites that could be adversely affected as well as any EU protected habitats and species that could be affected (also outside Natura 2000), effects on connectivity, fragmentation and other effects at the network scale. This should serve to orientate the scope and focus of the assessment of individual projects.

Where there is uncertainty about adverse effects on relevant features of Natura 2000 sites and their conservation objectives, it may be appropriate to carry out and record a risk assessment, which can consider the following aspects:

- the potential hazards of the plan and their likely consequences for the conservation objectives of the special area of conservation or site of Community importance / special protection area features;

⁽⁴²⁾ Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 establishing a framework for maritime spatial planning (OJ L 257, 28.8.2014, p. 135).

- for each hazard, the probability that the hazard will affect the special area of conservation / special protection area's conservation objectives;
- for each hazard, the magnitude, likely duration and irreversibility or reversibility of the effect (recording briefly the assumptions made or evidence used in reaching that conclusion).

Nevertheless, it should be born in mind that the underlying aim at all times is to avoid or remove any risk of adverse effect on the integrity of Natura 2000 sites, or to remove any reasonable grounds for concern that such an adverse effect may occur when the plan is implemented.

The assessment of the effects of plans under Article 6(3), and the assessment carried out in accordance with applicable SEA procedures, may identify activities or elements of the plan that are certain to harm the integrity of Natura 2000 sites, even if mitigation is carried out; such activities or elements could therefore be excluded from the plan at this point. The assessment could additionally provide an overview of which other activities may be harmful to protected habitats and species and thus better focus the assessment at project level.

However, future projects to be implemented under a plan should be in line with the outcome of the appropriate assessment undertaken for the strategic spatial/sectoral plan. This does not replace the requirement for an appropriate assessment of future projects stemming from that plan.

There are clear links and analogies between appropriate assessment of plans and strategic environmental assessment, which are covered in the section 5. Coordination of SEA with appropriate assessment is thus recommended. These are parallel but separate processes that usually overlap but which also differ in a number of key aspects. The appropriate assessment is narrower in focus and requires more rigorous tests, with the conservation and protection of Natura 2000 sites at its core. The findings and recommendations of appropriate assessment are mandatory and must be incorporated into and be part of a plan presented for adoption. In other words, the findings of the appropriate assessment must not just be taken into account, they condition the decision over whether or not to approve the plan or project.

It is recommended that a separate appropriate assessment file is maintained throughout the entire process of preparing or reviewing a plan. The file should include copies of all documentation relevant to the appropriate assessment and will be useful to record how environmental considerations were integrated into the plan.

It may be appropriate to plan follow-up and a reassessment of the expected effects and risks throughout the plan's lifetime. This will ensure that the predictions and estimates are realistic and identify any possible new effects that had not been considered due to lack of information or that arise in light of new elements or changes introduced in the plan. The 'final' appropriate assessment of any plan must be based on its final version. If the plan changes significantly at any time before adoption, the changes should be also addressed in the appropriate assessment, in an iterative process.

4.3. Sensitivity mapping

Identifying suitable locations or excluding unsuitable locations can be part of the appropriate assessment of plans. It needs to be based on a proper analysis of how far the EU protected habitat types and species present in the whole area of the proposed development are vulnerable to the planned activities.

Sensitivity mapping is a method often used to identify areas that may be particularly sensitive to development of sectoral activities. It is often used, for instance, to identify sensitive bird and bat areas that may be unsuitable for wind energy developments, or to identify potential conflict areas for industrial activities, or housing developments.

Sensitivity maps can be used at an early stage in the planning process to identify areas containing ecological communities sensitive to a specific influence or activity. They can inform strategic planning decisions during the initial site selection phase of the development process and can operate at a regional, national or transnational scale.

Sensitivity mapping approaches do not replace the need for a site-specific appropriate assessment under Article 6 of the Habitats Directive and for environmental impact assessments (EIAs). They can, however, be used during the appropriate assessments/EIAs and after the development consent has been delivered to inform siting and possible management prescriptions.

Sensitivity mapping uses geographic information systems (GIS) to collate, analyse and display spatial and geographic data, which are based on existing spatial biodiversity data relating to species and/or sites; however, sometimes data needs to be collected specifically to aid the creation of a sensitivity map that is relevant for the plan in question.

Sensitivity maps need to be regularly updated. The frequency and scale of these updates is an important aspect to consider in the design of sensitivity maps, as ecological communities are dynamic and their behaviour can be sometimes be difficult to predict. Therefore wildlife sensitivity maps should always be interpreted with caution.

The Commission has produced a *Wildlife Sensitivity Mapping Manual* ⁽⁴³⁾, a practical guide for developing sensitivity mapping approaches for renewable energy technologies. This manual provides an overview of datasets, methodologies and GIS applications. It focuses on species and habitats protected by the EU Nature Directives, with particular emphasis on birds, bats and marine mammals. It also includes a step-by-step approach for preparing wildlife sensitivity maps, which is presented in Box 22 below.

Box 22

Step-by-step approach to sensitivity mapping

- 1) *Identify the types of developments (projects, activities, infrastructure, etc.) to be included and the species and habitats likely to be affected. To do so consider:*
 - species/habitats likely to coincide with development (at any stage of their lifecycle) and consider all life history phases (breeding, migration, etc.)
 - different phases of development (e.g. construction, operational phases) as well as associated infrastructure
 - which species/habitats are sensitive to development
 - which species/habitats are of conservation concern (e.g. those listed within the Birds and Habitats Directives)
 - how species can be affected: e.g. habitat loss and degradation, collision with infrastructure, avoidance, displacement and barrier effects.
- 2) *Compile distributional datasets on sensitive species, habitats and other relevant factors.*
 - Review what data are already available and decide whether additional data should be collected
 - If the datasets are spatially incomplete, consider using modelling based on habitat and landscape predictors to forecast distribution in under-sampled localities
 - It is also important to highlight data deficiencies and other methodological shortcomings.
- 3) *Develop a sensitivity scoring system*
 - Assign sensitivity scores to species and habitats based on relevant characteristics (habitat fragility, conservation status, species behaviour, etc.)
- 4) *Generate the map*
 - Identify what is the most appropriate mapping format, GIS software, mapping unit, etc.
 - Generate a grid based on an appropriate mapping unit and overlay the species distributions (or models) and potentially other useful datasets, including relevant buffer zones
 - Identify the species present within each grid cell

⁽⁴³⁾ Available at https://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

— For each grid square, calculate a score using the species sensitivity scoring systems.

5) *Interpret the map*

- Group sensitivity scores in categories indicative of their level of sensitivity (e.g. very high, high, medium, low) or that indicate a particular prescription (e.g. no-go vs low risk areas)
- Develop guidance material that explains what data are used, how the map is generated, how it should be interpreted and what caveats exist regarding the interpretation.

National examples of sensitivity mapping are presented below.

Box 23

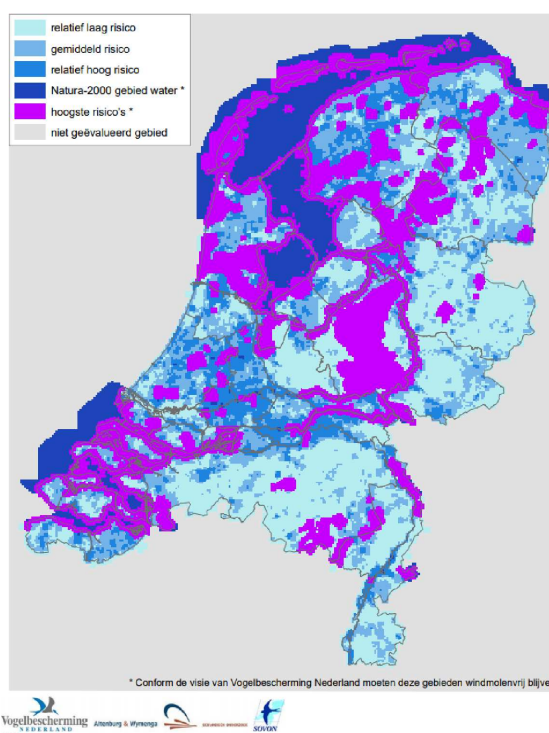
The Netherlands national wind farm sensitivity map

The National Wind Turbine Risk Map for the Netherlands is a spatial mapping tool for the early screening of onshore wind farm developments. The tool focuses on terrestrial bird populations and includes sites of ornithological importance such as migration hotspots, high natural value farmland and important roosting sites. The tool measures risk for bird species in terms of their conservation importance. It does not integrate any assessment of species susceptibility to collision.

Data were compiled from a variety of sources, including the national breeding bird census, water bird counts, colonial bird counts, data from a bird airstrike model (BAMBAS, bird biomass of flying birds), Natura 2000 sites and specific rare bird inventories. Migration hotspots were also integrated. Risk maps were generated for specific sensitive bird species or groups of species as individual layers, for example waterfowl birds, meadow birds, swans and geese, Natura 2000 and Red List species foraging areas. The individual layers were used to compile the final risk map.

For each 'layer' of the map, the grid cells in the Netherlands were classified as being of low, moderate or high risk based on the site's importance and/or number of species present. Buffer zones were identified for each species and applied to the maps. The scores from the various grid cells were aggregated in the final map.

This tool has proved to be very useful as a screening tool. While the map has not been formerly adopted within the Dutch planning system, it is still widely used.



Overall risk map illustrating risk from highest (purple) to relatively low risk (light blue)

(Source: Aarts, B. and Bruinzeel, L. (2009) De nationale windmolenrisicokaart voor vogels. SOVON Vogelonderzoek Nederland/ Altenburg & Wymenga

https://assets.vogelbescherming.nl/docs/e3b4524d-5cc2-4565-a65e-3226a124837e.pdf?_ga=2.19770104.1164016512.1551712082-129991070.1550147440)

Box 24

A sensitivity mapping tool for hydropower development in Austria

Hydropower developments should follow a strategic approach so that the remaining significant, sensitive and intact stretches of a river can be safeguarded. To support this, the World Wide Fund for Nature (WWF) prepared a master plan to provide a technically sound decision basis for assessing the need to protect Austrian waters (WWF Ökomasterplan, 2009). The study was published in 2009 and assessed, for the first time, the ecological significance of 53 of the largest rivers in Austria with a catchment area larger than 500 square kilometres. It also presented the official data of the current status analysis of the ministry responsible for implementing the EU Water Framework Directive and providing conservation-related information, such as on Natura 2000 sites and other protected areas.

Each of the water stretches was categorised and prioritised in order of importance according to different selection criteria (for example, ecological status, situation in protected areas, hydromorphology, length of contiguous free flow path) and each river stretch was ranked according to the following sensitivity classes:

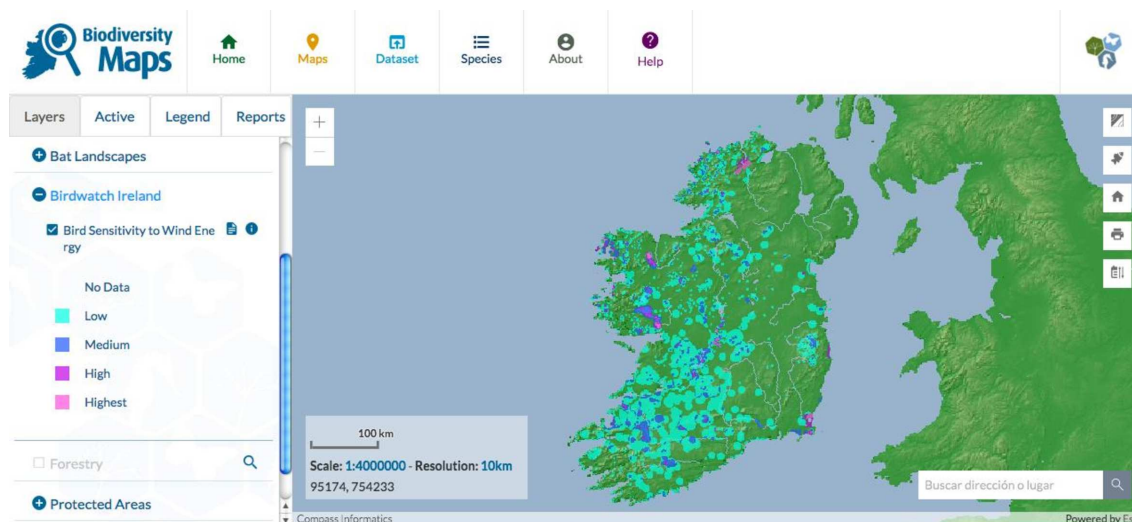
- Sensitivity class 1: very high merit protection based on the ecological status
- Sensitivity class 2: very high merit protection due to the situation in reserve(s)
- Sensitivity class 3: highly deserving of protection on the basis of morphology
- Sensitivity class 4: highly worthy of protection due to length of contiguous free flow
- Sensitivity class 5: potentially worthy of protection as there is no existing database for environmental condition assessment
- Sensitivity class 6: potentially worthy of protection
- Sensitivity class 7: low merit protection
- Sensitivity class 8: existing energy economic use
- Data deficient (ecological status, hydromorphology)



Box 25

Online platforms to access sensitivity maps in Ireland

A web platform enables rapid and interactive spatial examination of environmental sensitivities and potential for land-use conflicts. These can support strategic environmental assessment and appropriate assessment and, ultimately, informed planning and decision-making. As an example, the Irish Biodiversity Data Centre portal provides access to the bird sensitivity map to wind energy through an online web tool.



Source: <https://maps.biodiversityireland.ie/Map>

4.4. Consultation and dialogue in strategic planning

Recognising the benefits of dialogue and consultation, more and more planners are now adopting a more interactive and transparent planning process. This approach encourages early consultation with environmental authorities and stakeholders as an important element in ensuring that acceptable and sustainable solutions are found.

Consultation during strategic planning is equally important in reaching a common understanding of the issues at stake. It also encourages greater cooperation in the search for solutions (i.e. possible alternatives or mitigation measures) to the ecological effects identified in the plan assessment.

Consultation and dialogue with nature authorities from the outset is essential in order to identify possible risks and conflicts with sensitive areas and species, to better understand the vulnerability of habitats and species to the planned developments and to scope and carry out an appropriate assessment. Consultation with other authorities, NGOs, stakeholder groups and the public is also required under the SEA Directive (see box on p. 47 on public participation under the EIA and SEA Directives).

Participation is important in the definition phase of the plan and during the interactive and iterative process of working out realistic alternative solutions for problematic areas. In this respect, it is important to identify stakeholders and involve them in the consultations as this ensures that the strategic planning process takes into account all the relevant knowledge and information about any potential conflicts.

Developers and competent authorities should engage closely at the earliest possible stage if it is anticipated that an Article 6(4) derogation will be considered. This might be in the early stages of developing a proposal, or otherwise as soon as it becomes clear that a derogation may be needed. They should also ensure that the conditions for derogation are fully explored and documented, since this will help avoid delays to the decision-making process and ensure a transparent and robust decision.

5. LINKS WITH OTHER ENVIRONMENTAL ASSESSMENT PROCEDURES: EIA, SEA, WATER FRAMEWORK DIRECTIVE

5.1. Streamlining environmental assessments

Environmental assessment is a procedure that ensures that the environmental implications of decisions are taken into account before the decisions are made. Several pieces of EU legislation contain provisions on environmental assessment procedures. Besides Article 6 of the Habitats Directive, this is in particular the case of the Environmental Impact Assessment (EIA) Directive ⁽⁴⁴⁾, the Strategic Environmental Assessment (SEA) Directive ⁽⁴⁵⁾ and Article 4(7) of the Water Framework Directive (WFD ⁽⁴⁶⁾).

The integration and coordination of the environmental assessment requirements of these directives can greatly contribute to improving the efficiency of environmental permitting procedures. The EIA Directive includes provisions on streamlining the assessment procedures related to environmental issues required under various EU directives, including the Habitats Directive and the Water Framework Directive. It requires specifically that Member States, where appropriate, ensure that coordinated and/or joint procedures fulfilling the requirements of that Union legislation are provided (Article 2(3) of the EIA Directive).

Provisions for coordinated or joint environmental assessment procedures arising simultaneously from the SEA Directive and other EU legislation are also set out in Article 11(2) of the SEA Directive. They aim to avoid duplication of assessments, without prejudice to the specific requirements of each directive.

The Commission has issued a guidance document on streamlining environmental assessments ⁽⁴⁷⁾.

5.2. Environmental impact assessment, strategic environmental assessment and the appropriate assessment

The EIA and SEA Directives require that projects, and plans and programmes, likely to have significant effects on the environment undergo environmental assessment prior to their approval or authorisation.

The requirement to assess the significant effects of plans or projects may arise jointly under the SEA or EIA Directives and Article 6(3) of the Habitats Directive. In that case the assessment and permitting procedures can run jointly or in coordination, as provided for by the EIA and SEA Directives. However, assessments carried out pursuant to these Directives cannot replace the procedure and obligations provided for in Article 6(3) and (4) of the Habitats Directive, as neither procedure overrides the other.

An appropriate assessment can be reported either within the EIA or SEA report or in a separate report. In either case, the information and conclusions relevant to the appropriate assessment must be distinguishable and differentiated from those of the EIA or SEA. This is necessary as there are a number of important distinctions between the EIA/SEA and appropriate assessment procedures (see (5.2.2 below).

*It is essential that the information relevant to the appropriate assessment and its conclusions remain clearly distinguishable and identifiable in the environmental impact assessment report so that they can be differentiated from those of the general EIA or SEA. This is necessary as there are a number of important distinctions between the EIA/SEA and the appropriate assessment procedures, which means that **an SEA or an EIA cannot replace, or be a substitute for, an appropriate assessment as neither procedure overrides the other.***

See the Article 6 Guide – section 4.6.1.

⁽⁴⁴⁾ Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU (OJ L 26, 28.1.2012, p. 1).

⁽⁴⁵⁾ Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (OJ L 197, 21.7.2001, p. 30).

⁽⁴⁶⁾ Directive 2000/60/EC establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1).

⁽⁴⁷⁾ Commission notice 2016/C 273/01, available at: <http://eurlex.europa.eu/legalcontent/EN/TXT/?uri=OJ:C:2016:273:TOC>

5.2.1. **Opportunities for and benefits of streamlining EIA/SEA and appropriate assessment**

There are several advantages to streamlining EIA/SEA and appropriate assessments. They can, for instance, help to better understand the relationships between different environmental factors, avoid duplication of assessments, contribute to making more efficient use of resources needed to carry out the assessments, and enable better coordination in permitting procedures.

Key elements for effective streamlining of appropriate assessment and EIA/SEA include:

- close cooperation between responsible authorities;
- adequate scoping, which is a common practice in the EIA and SEA procedures;
- close cooperation and proper information exchange between the experts preparing the EIA/SEA and the experts conducting the appropriate assessment (e.g. information about noise, air, water, soil issues by the respective expert to the expert in biodiversity);
- quality control by the competent authority;
- clear and distinct conclusions for each of the streamlined assessment procedures.

Several provisions of the EIA and SEA Directives are relevant to the Article 6(3) appropriate assessment and can contribute to its quality in the context of streamlined implementation. They include:

Scoping:

'Where requested by the developer, the competent authority [...] shall issue an opinion on the scope and level of detail of the information to be included by the developer in the environmental impact assessment report' (Article 5(2), EIA Directive).

The SEA Directive provides for mandatory consultation of the authorities with powers in the field of the environment, aiming to improve the quality of the environmental report: 'The authorities referred to in Article 6(3) shall be consulted when deciding on the scope and level of detail of the information which must be included in the environmental report' (Article 5(4), SEA Directive).

Ensuring quality and completeness of the assessment:

'The developer shall ensure that the environmental impact assessment report is prepared by competent experts; the competent authority shall ensure that it has, or has access as necessary to, sufficient expertise to examine the environmental impact assessment report; and where necessary, the competent authority shall seek from the developer supplementary information, [...] which is directly relevant to reaching the reasoned conclusion on the significant effects of the project on the environment' (Article 5(3), EIA Directive).

Consultation and public participation:

'Member States shall take the measures necessary to ensure that the authorities likely to be concerned by the project by reason of their specific environmental responsibilities or local and regional competences are given an opportunity to express their opinion on the information supplied by the developer and on the request for development consent... In order to ensure the effective participation of the public concerned in the decision-making procedures, the public shall be informed electronically and by public notices or by other appropriate means, of the following matters early in the environmental decision-making procedures and, at the latest, as soon as information can reasonably be provided' (Article 6, EIA Directive).

'Member States shall ensure that their conclusions [...] on whether plans or programmes are likely to have significant environmental effects [...], including the reasons for not requiring an environmental assessment [...], are made available to the public' (Article 3, SEA Directive).

'The authorities [...] and the public [...] shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme or its submission to the legislative procedure. Member States shall designate the authorities to be consulted which, by reason of their specific environmental responsibilities, are likely to be concerned by the environmental effects of implementing plans and programmes. Member States shall identify the public [...], including the public affected or likely to be affected by, or having an interest in, the decision-making subject to this Directive, including relevant non-governmental organisations, such as those promoting environmental protection and other organisations concerned.' (Article 6, SEA Directive).

Monitoring:

'Member States shall ensure that the features of the project and/or measures envisaged to avoid, prevent or reduce and, if possible, offset significant adverse effects on the environment are implemented by the developer, and shall determine the procedures regarding the monitoring of significant adverse effects on the environment' (Article 8a, EIA Directive).

'Member States shall monitor the significant environmental effects of the implementation of plans and programmes in order, inter alia, to identify at an early stage unforeseen adverse effects, and to be able to undertake appropriate remedial action' (Article 10, SEA Directive).

Information to the public and consulted authorities:

'When a decision to grant or refuse development consent has been taken, the competent authority or authorities shall promptly inform the public and the authorities [likely to be concerned by the project] thereof, [...] and shall ensure that the following information is available...: the content of the decision and any conditions attached thereto [...]; the main reasons and considerations on which the decision is based' (Article 9, EIA Directive).

Conflict of interest:

'Member States shall ensure that the competent authority or authorities perform the duties arising from this Directive in an objective manner and do not find themselves in a situation giving rise to a conflict of interest. Where the competent authority is also the developer, Member States shall at least implement, within their organisation of administrative competences, an appropriate separation between conflicting functions when performing the duties arising from this Directive.' (Article 9a, EIA Directive)

Transboundary impacts:

Article 7 of the EIA Directive sets the provisions for assessing projects with transboundary impacts, including the requirements to inform another Member State where likely significant effects of a plan or project are envisaged on that Member State. The Member State that may be affected can then participate in the assessment if it so wishes. The EU has signed the Convention on Environmental Impact Assessment in a Transboundary Context (the Espoo Convention). In order to coordinate and facilitate the assessment procedures for cross-border projects, and in particular to conduct consultations in accordance with the Convention, the Member States concerned may set up a joint body, on the basis of equal representation.

Transboundary consultations are also envisaged and regulated under the SEA Directive (Article 7). These provisions on transboundary consultations are also highly relevant in terms of the overall goals of the Birds and Habitats Directives and the Natura 2000 network. This is because they provide an important preventive tool during the appropriate assessment of a plan or project whose adverse effects could jeopardise these goals in a neighbouring Member State.

5.2.2. Specific features of the appropriate assessment and differences with EIA/SEA procedures

While the streamlining of environmental assessments under the Habitats Directive and the EIA or SEA Directives is beneficial and recommended in most cases, it is important to keep in mind the specific features and differences in the scope and focus of the respective assessments. The use of certain terms and the consequences from the assessments can also be different. In particular:

- The appropriate assessment is focused on the protection of Natura 2000 sites, i.e. areas of high biodiversity value of European importance, and therefore requires more rigorous tests. Its conclusions are **binding** in that they determine whether a plan or project can be authorised or not (the competent authorities can agree to the plan or project only *after having ascertained that it will not adversely affect the integrity of the site*). On the other hand, the results of the EIA or SEA *shall be taken into account* in the development consent procedure or in the plan preparation and adoption.
- In the context of coordinated or joint procedures it would make sense to carry out the appropriate assessment earlier in the process. This would avoid a potentially costly and lengthy EIA/SEA procedure if the conclusions of the appropriate assessment are already negative, meaning authorisation cannot be granted in accordance with the Article 6(3) provisions (unless the plan or project can go ahead under the Article 6(4) provisions).

- Under the EIA Directive, mitigation and compensation measures are envisaged *to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment*, in particular on species and habitats protected under the Birds and Habitats Directives. Thus, compensation measures can also be considered in the context of the mitigation hierarchy to offset residual impacts with the aim to avoid any net loss of biodiversity.

By contrast, in the case of plans and projects assessed under the Habitats Directive, mitigation measures to avoid, prevent or reduce significant adverse effects on the site's integrity are considered under the Article 6(3) appropriate assessment, but compensatory measures to offset residual impacts are used as a last resort only under the procedure of Article 6(4). This would take place if it is decided to proceed with the plan or project despite the negative conclusion of the appropriate assessment. In such case, it must first be demonstrated that no alternative solutions exist that would avoid affecting the integrity of Natura 2000 sites and that the plan or project is justified for imperative reasons of overriding public interest.

- Furthermore, as regards the stage of the assessment when 'mitigation measures' are considered, under the EIA Directive mitigation can be taken into account already at the screening stage. Such measures cannot be considered in the 'screening' stage of the Article 6(3) procedure, but only when adverse effects are analysed in the actual appropriate assessment stage.

The measures taken to avoid, prevent, reduce and, if possible, offset significant adverse effects on the environment, in particular on species and habitats protected under Council Directive 92/43/EEC and Directive 2009/147/EC of the European Parliament and of the Council, should contribute to avoiding any deterioration in the quality of the environment and any net loss of biodiversity. [...]

Member States should ensure that mitigation and compensation measures are implemented, and that appropriate procedures are determined regarding the monitoring of significant adverse effects on the environment resulting from the construction and operation of a project, inter alia, to identify unforeseen significant adverse effects, in order to be able to undertake appropriate remedial action.

EIA Directive. Preamble (Directive 2014/52/EU, recitals 11 and 35).

5.2.3. **Relationship between SEA/EIA/appropriate assessment and the strict species protection provisions of the Nature Directives**

Article 3 of the EIA Directive stipulates that 'the environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors: [...] (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC'. Similar provisions are applicable to plans pursuant to Article 5(1) of the SEA Directive.

On this occasion it is important to note that the Birds and Habitats Directives, in addition to site protection regulated by Article 4 of the Birds Directive and Article 6 of the Habitats Directive, also establish a system of strict protection of certain species across their entire natural range within the EU, i.e. both within and outside Natura 2000 sites. These protection measures apply to species listed in Annex IV to the Habitats Directive and to all wild bird species in the EU. The exact terms are laid down in Article 5 of the Birds Directive and Articles 12 (for animals) and 13 (for plants) of the Habitats Directive.

In essence they require Member States to prohibit:

- the deliberate capture or killing of species;
- their deliberate disturbance, in particular during breeding, rearing, hibernation and migration;
- the deterioration or destruction of breeding sites or resting places;
- the deliberate destruction of nests or eggs, or the uprooting or destruction of protected plants.

The implementation of a plan or development/operation of a project can lead to conflicts with these prohibitions. During the appropriate assessment and EIA/SEA the developer together with the competent authority should therefore check if the plan or project is compatible with these strict species protection provisions. Such a check would require identification of species and their habitats, which could be potentially affected, verification of their presence on the area affected by a plan or project as well as of their breeding sites or resting places, analysis of possible impacts on the species and of suitable mitigation measures. If impacts on the individuals of the species or on their breeding sites and resting places are confirmed, or if it cannot be excluded, the derogations from strict species protection may be required.

However, it has to be noted that derogations are only allowed in limited cases, e.g. in the interest of public health and safety, provided that there is no other satisfactory alternative and provided that the consequences of these derogations are not incompatible with the overall aims of the Directives. The conditions for applying derogations are set out in Article 9 of the Birds Directive and Article 16 of the Habitats Directive.

It is important to note as well that these provisions may also apply to plans and projects which are screened out from appropriate assessment and/or from EIA/SEA. In such cases the analysis of whether derogations under Article 9 of the Birds Directive and 16 of the Habitats Directive are applicable will have to be performed in a separate procedure.

A permit to derogate from strict species protection can be granted as a separate decision or within a single permit resulting from different assessments and authorisation procedures. Either way it needs to clearly specify the reasons for and conditions of such derogation.

Further information on the strict species protection requirements, including latest guidelines, are available on the European Commission website ⁽⁴⁸⁾.

5.3. Assessments under Article 4(7) of the Water Framework Directive, coordinated or integrated with the Article 6(3) procedure under the Habitats Directive

There are also strong links between the Water Framework Directive (WFD) and the Habitats Directive. They are both applicable, at least in part, to the same environment – that of aquatic ecosystems and terrestrial ecosystems and wetlands directly dependent on them. They also have broadly similar ambitions in that they aim to ensure the non-deterioration of aquatic ecosystems and to enhance their ecological condition. Where appropriate, they should therefore be implemented in a coordinated way to ensure that they operate in an integrated manner ⁽⁴⁹⁾.

Like the Habitats Directive, the WFD lays down specific provisions for assessing the effects of new developments on water bodies. Under Article 4(7) of the WFD, exemptions can be approved by the authorities for new modifications and sustainable human development activities that: (i) result in the deterioration of the status of the water body; or (ii) prevent the achievement of good ecological status or potential, or good groundwater status under certain conditions ⁽⁵⁰⁾.

Under Article 4(8) of the WFD, Member States are required – when applying Article 4(7) of the WFD – to ensure that the application is consistent with the implementation of other EU environmental legislation. In other words, if the project is granted a derogation under Article 4(7) of the WFD, it must still comply with Article 6(3) and (4) of the Habitats Directive, if applicable.

If the development potentially affects both a WFD objective and a Natura 2000 site, then both the WFD Article 4(7) procedure and the assessment procedure under Article 6(3) of the Habitats Directive must be undertaken. Ideally, this should be done in a coordinated or integrated manner, as also recommended by the EIA Directive. Each assessment has a different focus: the former will assess if the project is likely to compromise the primary objectives of the WFD, while the latter will assess whether the project will adversely affect the integrity of a Natura 2000 site.

However, this does not prevent certain aspects of the assessment being coordinated, e.g. through surveys and consultations. It should be stressed that if the WFD procedure may lead to a licence being granted, but the plan or project conflicts with Natura 2000 requirements, authorisation cannot be granted, except under Article 6(4) provisions.

⁽⁴⁸⁾ https://ec.europa.eu/environment/nature/conservation/index_en.htm

⁽⁴⁹⁾ See the Commission FAQ on the WFD and Nature Directives: <http://ec.europa.eu/environment/nature/natura2000/management/docs/FAQ-WFD%20final.pdf>

⁽⁵⁰⁾ For case-law on the application of Article 4(7) see Court rulings in Cases C-461/13 and C-346/14.

While the integration of appropriate assessment procedures with procedures under the EIA Directive is mandatory, for the WFD it is discretionary. Nonetheless, a number of Member States have already provided for, or are in the process of establishing, integrated procedures for cases where EIA, appropriate assessment and the WFD 4(7) assessment are all required. Streamlining these assessments is encouraged in EU guidance on the implementation of the WFD ⁽⁵¹⁾.

The similarities between the WFD Article 4(7) assessment and those under the EIA and Habitats Directives mean that certain steps under the different procedures can be carried out together. This concerns particularly ‘screening’, ‘scoping’ and the necessary data collection. Such a streamlined approach can lead to significant cost and time savings, notably in relation to the data collection stage that can be jointly performed once the data requirements under each directive are clarified during the previous steps.

Further synergies can be applied, for instance regarding the search for alternatives or mitigation measures. However, in all cases the distinct focus of the various tests under each directive needs to be fulfilled.

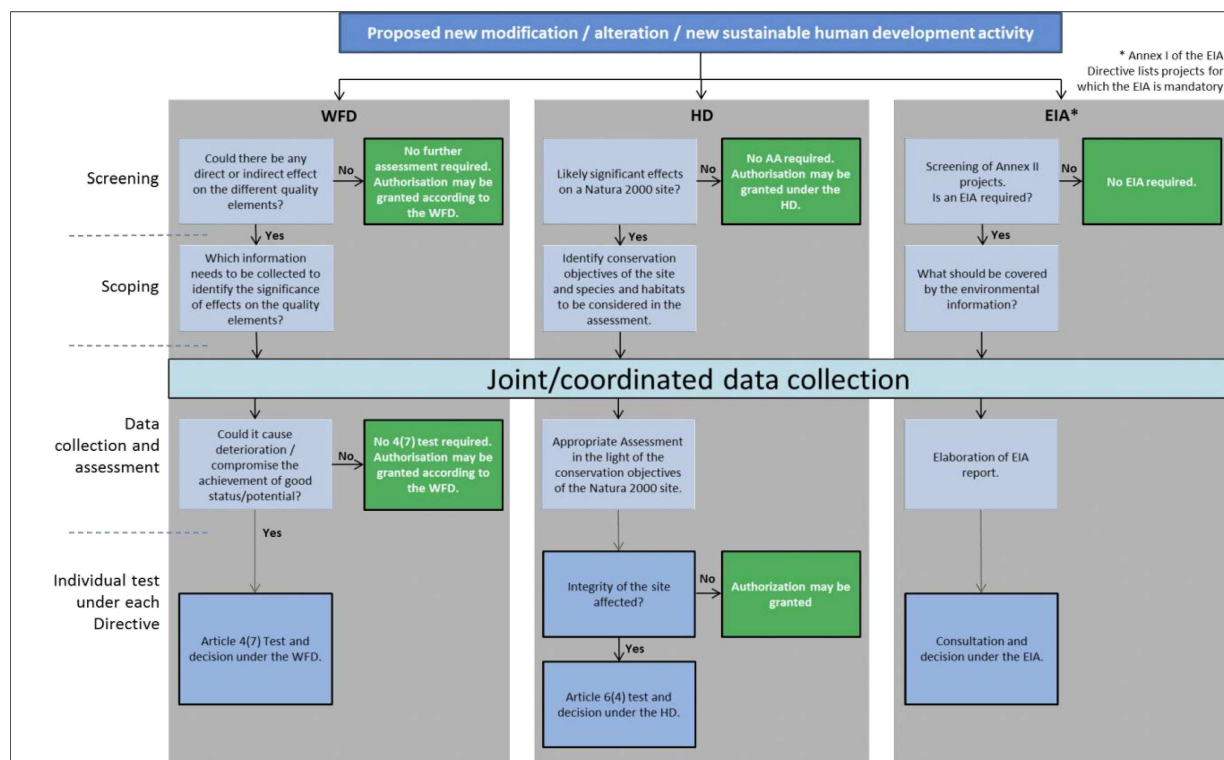
If the conditions of one directive are fulfilled but not the other, then the authorities may not authorise the project because in such a case the project would still infringe EU legal provisions. Instead, it should be examined whether amendments can be made to the project so that it satisfies the requirements of all relevant directives.

Figure 3 outlines similarities and differences across the key steps of assessments under WFD Article 4(7), the EIA and Articles 6 of the Habitats Directive.

Figure 3

Streamlining of assessments under the WFD, Habitats Directive and EIA Directive

Source: CIS, 2017. Common Implementation Strategy for the Water Framework Directive and the Floods Directive. Guidance Document No 36. Exemptions to the Environmental Objectives according to Article 4(7).



⁽⁵¹⁾ See in particular: Common Implementation Strategy for the Water Framework Directive and the Floods Directive. Guidance Document No 36. Exemptions to the Environmental Objectives according to Article 4(7). Available at: <https://circabc.europa.eu/sd/a/e0352ec3-9f3b-4d91-bdbb-939185be3e89/CISGuidanceArticle47FINAL.PDF>

6. KEY REFERENCES

CIS, 2017. Common Implementation Strategy for the Water Framework Directive and the Floods Directive. Guidance Document No 36. Exemptions to the Environmental Objectives according to Article 4(7). Available at: <https://circabc.europa.eu/sd/a/e0352ec3-9f3b-4d91-bdbb-939185be3e89/CISGuidanceArticle47FINAL.PDF>

Ecosystems, 2014. Article 6 of the Habitats Directive. Rulings of the European Court of Justice. Available at: https://ec.europa.eu/environment/nature/info/pubs/docs/others/ECJ_rulings%20Art_%206%20-%20Final%20Sept%202014-2.pdf

European Commission, 1999. Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.

European Commission, 2011. Links between the Water Framework Directive and the Nature Directives. Frequently Asked Questions. Available at: <http://ec.europa.eu/environment/nature/natura2000/management/guidanceen.htm>

European Commission, 2012. Commission Note on setting conservation objectives in Natura 2000 sites. Available at: <http://ec.europa.eu/environment/nature/natura2000/management/guidanceen.htm>

European Commission, 2013(a). Guidance on the Application of the Environmental Impact Assessment Procedure for Large-scale Trans-boundary Projects. European Commission, 2013. <http://ec.europa.eu/environment/eia/pdf/Transboundary%20EIA%20Guide.pdf>

European Commission, 2013(b). Guidance Document ‘Streamlining environmental assessment procedures for energy infrastructure “Projects of Common Interest” (PCIs).’ European Commission, May 2013. <http://ec.europa.eu/environment/eia/pdf/PCIguidance.pdf>

European Commission, 2016. Commission Guidance document on streamlining environmental assessments conducted under article 2.3 of the Environmental Impact Assessment Directive. Available at: [http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016XC0727\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016XC0727(01)&from=EN)

European Commission, 2017(a). Guidance on Scoping. Directive 2011/92/EU as amended by 2014/52/EU. European Commission. <http://ec.europa.eu/environment/eia/eia-support.htm>

European Commission, 2017(b). Guidance on Screening. Directive 2011/92/EU as amended by 2014/52/EU. European Commission. <http://ec.europa.eu/environment/eia/eia-support.htm>

European Commission, 2019. Commission notice ‘Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC’ (OJ C 33, 25.1.2019, p. 1). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C.2019.033.01.0001.01.ENG&toc=OJ:C:2019:033:FULL>

The European Commission has published several sector-specific guidance documents (on non-energy extractive industries, wind farm development, ports and estuaries, inland waterway transport, aquaculture, etc.). These provide further advice on how to carry out an appropriate assessment in relation to the development of plans and projects in each of these sectors. The guidance documents are available at:

<https://ec.europa.eu/environment/nature/natura2000/management/guidanceen.htm>

ANNEX

EXAMPLES OF PRACTICES, CASE STUDIES, METHODS AND NATIONAL GUIDANCE

Introduction

This annex is intended to provide elements of guidance and examples of processes and methods for the different stages of the implementation of Article 6(3) and 6(4) procedures. They are grouped and presented according to the main sections and items covered in the guidance document.

TABLE OF CONTENTS

	<i>Page</i>
1. SCREENING AND APPROPRIATE ASSESSMENT: APPROACHES, METHODS, EXAMPLES FROM MEMBER STATES	79
1.1. Information and practical tools to support the screening and the appropriate assessments (AA)	79
1.2. Guidance for the assessment	82
1.3. Appropriate Assessment of a national Electricity Programme in Ireland – Assessment of Cumulative effects	89
2. IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST (IROPI)	93
2.1. Examples of various types of IROPI and their justification	93
3. COMPENSATORY MEASURES	96
3.1. Examples of compensatory measures under Article 6(4)	96
3.2. Time-related aspects of compensation measures	99
4. LINKS BETWEEN ENVIRONMENTAL ASSESSMENT PROCEDURES: AA, EIA, SEA	102
4.1. Comparison of procedures under Appropriate Assessment (AA), EIA and SEA	102
5. STRATEGIC PLANNING – ASSESSMENT OF PLANS	105
5.1. Example: Planning of highways in Austria	105
5.2. Example: Strategic planning of new hydropower developments in the Danube	105
5.3. Example: Spatial plan for offshore wind farms and grid connections in the German North Sea EEZ	107

1. SCREENING AND APPROPRIATE ASSESSMENT: APPROACHES, METHODS, EXAMPLES FROM MEMBER STATES

1.1. Information and practical tools to support the screening and the appropriate assessments (AA)

Germany – Database and Information system of the Federal Agency for Nature Conservation (BfN) for appropriate assessments

The necessary **information on potential negative effects for nearly all project types and plans** is provided in the information system *FFH-VP- Info* of the Federal Agency for Nature Conservation. Additionally, *FFH-VP-Info* hosts an extensive database of possible impacts and effects with respect to specific habitat types and species that can be used for screening and appropriate assessments. <http://ffh-vp-info.de/FFHVP/Page.jsp>

I. Objectives and functions of *FFH-VP-Info*

The main objective of *FFH-VP-Info* is to function as a central platform providing information on impact factors that have to be considered for the screening (stage 1) and appropriate assessments (stage 2) of plans or projects, and to provide information on potential effects of impacts on specific habitats and species under the Habitats Directive and the Bird Directive.

Access type No 1 (project types, plans, impact factors) intends to support proponents and project developers by providing a quick overview of all impact factors they have to take into account.

Access type No 2 (habitats, species) allows in-depth enquiries on the specific effects of an impact factor on habitats or species that may be of concern for the project.

Additional information includes a glossary, cited literature, data about mobility and home ranges of species.

Overall, *FFH-VP-Info* aims at providing best scientific knowledge, facilitating expert assessments and their scrutiny by the permitting authorities. While the completeness and accuracy of the assessments is important to guarantee legal safety, the amount of time, financial and personal efforts used may be kept at a reasonable level on both sides by providing easy access to the relevant information.

=> <http://ffh-vp-info.de/FFHVP/Page.jsp?name=ziel> (introduction of *FFH-VP-Info*)

II. Screening tool for project types and plans and their possible effects

The screening tool provides data on about 140 project types assigned to 19 groups. This includes an estimation of possible relevance as regards 36 different impact factors. Relevance is indicated by numbers:

0 = normally not relevant (exceptions may apply)

1 = potentially relevant

2 = regularly/generally relevant

A checklist and a report are available for each project type, with short individual explanations of the relevance ratings of impact factors. For each impact factor an explanatory page is linked to a short definition and detailed descriptions on the potential effects of the respective factor (see below).

=> <http://ffh-vp-info.de/FFHVP/Page.jsp?name=projekttypen> (introduction projects)

=> <http://ffh-vp-info.de/FFHVP/Projekt.jsp?start> (database projects)

III. Database and datasheets to the habitats and the species of the Habitats Directive and the Birds Directive

This is the core of the information system. It provides detailed information on the sensitivity and potential effects of the impact factors for nearly all German

- Habitats of Annex I Habitats Directive => <http://ffh-vp-info.de/FFHVP/Lrt.jsp>
- Species of Annex II Habitats Directive => <http://ffh-vp-info.de/FFHVP/Art.jsp>
- Bird species of Annex I and Article 4(2) Birds Directive => <http://ffh-vp-info.de/FFHVP/Vog.jsp>

Once the subject is chosen, the relevance of the different impact factors with respect to a particular habitat or species is displayed in a table. The selection of a topic/effect leads to further information which is provided in 5 categories:

1. Sensitivity / possible effects (best scientific knowledge regarding sensitivity of habitats and species and about possible effects for all 36 impact factors);
2. Regeneration capacity (information on natural self-regeneration);
3. Established methods for assessing impacts (hints, references and comments on parameters, criteria or methods to conduct prognoses of impacts and effects);
4. Thresholds of significance and information for the screening (examples, orientation values, thresholds for relevant effects);
5. Thresholds of significance and advice for the appropriate assessment (examples, orientation values, thresholds for significant adverse effects).

When selecting further the effects of an impact factor, one or more pages open up to display excerpts of scientific findings, expert knowledge and estimates contained in the database. There is a possibility to read or print selective or comprehensive reports of these data.

The relevance ratings are based on scientific sources that have been evaluated and extracted. Where such sources are not available the ratings are suggestions for orientation, comparable to the relevance ratings for project types.

The sources that have been used are marked with respect to their scientific quality and/or their specificity.

=> <http://ffh-vp-info.de/FFHVP/Page.jsp?name=lebensraumarten> (introduction habitats/species)

IV. Definition and description of 36 impact factors

Knowledge base on 36 impact factors assigned to 9 groups with specific definitions and detailed descriptions about possible effects on habitats and species. These impact factors are the common link between projects and habitats/species. They can also be read or printed as reports.

=> <http://ffh-vp-info.de/FFHVP/Page.jsp?name=wirkfaktoren> (introduction impact factors)

=> <http://ffh-vp-info.de/FFHVP/Wirkfaktor.jsp> (database impact factors)

V. Additional information

So far, additional information includes a bibliography of the literature cited in the system, a glossary and links containing e. g. a web mapping system of the German Natura 2000 sites. In future, the system may serve as a platform for presenting further information on the assessment of impacts and effects as far as it is appropriate on the federal level.

Ireland – AA GeoTool – Information for screening and appropriate assessment

AA GeoTool application supports the data gathering process during screening (stage 1) and the appropriate assessment (stage 2). The Environmental Protection Agency (EPA) and the National Parks and Wildlife Service (NPWS) have worked together to develop the AA GeoTool. The application uses data directly from a web service provided by the NPWS. The data is regularly updated and the assessments are based on the most up-to-date information available.

The AA GeoTool allows the user to select a point on the map and then search for SACs and SPAs within a defined distance/ upstream/ downstream of the point. The distance selected by the user is dependent on the level of potential environmental impact from a plan or project.

The information gathered for each Natura 2000 site located within the selected distance range includes the following:

1. site type, e.g., SAC or SPA;
2. unique site code for the site;
3. site name;
4. distance of the site from the users selected starting point;
5. search direction selected by user;
6. list of qualifying interests for each site;
7. Url link to the conservation objectives for each site.

Link to AA GeoTool: <https://gis.epa.ie/EPAMaps/AAGeoTool>

Further information on specific Natura 2000 Sites can be found on the NPWS website: <http://www.epa.ie/terminalfour/AppropAssess/index.jsp> and also <https://gis.epa.ie/EPAMaps/default>

Netherlands – Tools and guidance for appropriate assessment

In the Netherlands a 'route planner for consideration of protected nature in environmental permits' is available ⁽¹⁾, which helps in taking all the steps necessary in the process. This route planner is intended for the applicant of an environmental permit where a nature check is required. It is also intended for the competent authority involved in the processing of an application for an environmental permit, namely the municipality and the province. This route planner describes the procedural steps that are necessary if an assessment for protected species or protected Natura 2000 sites is part of the procedure for obtaining an environmental permit. The route planner helps the applicants and practitioners with questions such as 'How do I know whether a nature assessment is required?', 'In which phase should the ecological data be available?' and 'How long does the procedure take?'.

There is also a tool to predict possible impacts on species and habitat types in Natura 2000 sites (but not on the integrity of the site as such). The impact indicator 'Natura 2000 – ecological preconditions and disruptive factors' is a tool for developers, permit providers and plan makers who have to deal with activities in or near Natura 2000 areas. The effects indicator is an instrument with which possible harmful effects as a result of the activity and plans can be explored. The effects indicator provides information about the sensitivity of species and habitat types for the most common disturbing factors. This information is generic: to determine whether an activity is harmful in practice, further research must be undertaken.

The web also contains guidance on significance ⁽²⁾, developed in 2010, which provides advice for the assessment of the significance of impacts on Natura 2000 sites. The starting point is that if, as a result of an intervention, the surface area of habitat, number of a species or quality of a habitat will be lower than referred to in the conservation objectives, then there may be significant consequences. However, the specific characteristics of the activity or the specific circumstances of the area can make that, despite the decrease, there are no significant consequences. Detailed analysis at the site level can therefore lead to a different conclusion, which is described in the guidelines.

In addition, there is a specific guidance for projects with possible nitrogen effects. For N-deposition for the Netherlands a complex system has been developed that takes into account the cumulative impacts of (only) nitrogen from different sources.

On national projects, a 'permit data bank' provides all relevant information, the decision and since 1.1.2017 also the complete appropriate assessments for permits related to the implementation of the Nature Conservation Act.

⁽¹⁾ <https://www.synbiosys.alterra.nl/bijl2/routeplanner.aspx>

⁽²⁾ https://www.commissiomer.nl/docs/mer/diversen/leidraad_bepaling_significantie27052010.pdf

1.2. Guidance for the assessment

Austria – Guidelines for assessment of transport infrastructure

Austrian Research Association Road – Rail –Transport (www.fsv.at) has developed guidelines, so called 'RVS' ⁽³⁾. The Austrian Ministry for Transport, Innovation and Technology motorways and highways has made these guidelines binding for the ASFINAG (national public road company) – and part of the 'rules of the game' for other projects as well. They describe, inter alia, how planning processes must be designed, which methods should be used to sufficiently consider different environmental requirements. These guidelines contain for example, recommendations or agreements on thresholds, descriptions of collection methods, or definitions of technical terms. For nature protection – especially for Natura 2000 and EU species protection requirements – a specific RVS was worked out and published 2015 ('Species conservation assessments in infrastructure projects', RVS 04.03.13). Topics such as the definition of a significant nuisance for a population or a Natura 2000 area are addressed in a way the users – the project planning offices and infrastructure evaluation authorities – can clearly understand.

Belgium – Guidelines to assess acidification and eutrophication through aerial deposits

There are guidelines on impacts such as 'acidification through aerial deposits' and 'eutrophication through aerial deposits'. These methodologies are linked to activities such as intensive agriculture, industrial heating and energy processes and mobility (deposition of NO_x and NH₃). For assessing these possible impacts, a two-steps approach is promoted. For a first screening, an **interactive online tool** is available to determine through a quick scan whether there can be a possible impact. If this quick deposition scan gives a green light, no possible harmful impact is to be expected. If the tool gives a red light, this means that there might be a harmful impact that needs to be examined closer through an appropriate assessment (<https://www.milieuinfo.be/voortoets/>).

Germany – Setting thresholds to determine significant adverse effects

In Germany, as elsewhere, because of a high level of subjectivity, it was difficult to assess the significance of effects on Natura 2000 target features, which is the core of the appropriate assessment. As a result, the competent authorities often did not have the reasonable scientific certainty they needed to back their decisions on whether or not to authorise a plan or project.

To address this problem and ensure a more uniform and consistent approach when assessing the impact significance in practice, the German Federal Agency for Nature Protection (BfN) commissioned a research project to provide scientifically tested rules and conventions for assessing significance of effects on all habitat types and species listed in the Birds and Habitats Directives that occur in Germany. The resulting guidance document was published in 2007 (Lambrecht & Trautner 2007).

A: Background and status of the standards

Based on the ruling of the CJEU in the Waddenzee-case the highest national administrative court in Germany (BVerwG) came to the conclusion that a loss of habitat which is part of the conservation objectives in a Natura 2000 site should, in general, be considered a significant adverse effect on the integrity of the site. Also the ruling of the CJEU regarding the Galway-Case 11.4.2013 (C-258/11) shows clearly that a strict protection of habitats in Natura 2000 sites is required and that even small losses might be assessed as significant under specific conditions.

⁽³⁾ RVS=Guidelines and Regulations for the Planning, Construction and Maintenance of Roadways (RVS) www.fsv.at

In order to deal properly with relatively small losses, the standards of Lambrecht & Trautner (2007) provide orientation levels of significance. These standards were developed by scientific research and development projects and then discussed and evaluated through broad expert participation procedure during a six year period. They are now broadly accepted and agreed, recommended in guidelines, officially and regularly regarded by administrative courts and broadly used in appropriate assessments of all kinds.

B: Concept of the standards

The starting premise for the standard is that, in general, a permanent loss of habitat types and habitats for species, which are part of the conservation objectives in a Natura 2000 site, should be considered a significant adverse effect on integrity of the site. A certain level of loss could nevertheless be treated as insignificant for some habitat types and species under certain conditions.

The guidance provides scientifically agreed criteria and thresholds for determining significance, which are based on qualitative and functional aspects, as well as on quantitative criteria. For an impact to be considered insignificant all the following conditions must be met:

- A. No important or special function or variant of the habitat is affected. Specific features of the habitat must remain unaltered;
- B. Orientation values of 'quantitative — absolute area loss' (defined for each habitat type and for habitats of species) are not exceeded;
- C. A 'relative area loss' of 1 % of the total area of the habitat in the site is not exceeded;
- D. Cumulative effects with other projects do not exceed the above values (B and C);
- E. Cumulative effects with other impact factors do also not exceed the above values.

C: Developing the thresholds for habitat loss

Orientation values for non-significant losses were developed by a habitat-specific and species-specific approach using a set of criteria. The thresholds were defined taking into account the vulnerability of the habitats, which was estimated on the basis of 3 main criteria and 4 secondary criteria:

Main criteria for habitat types:

- ecological minimum viable area of the habitat;
- average area of the habitat in Natura 2000 sites;
- total area of the habitat in the Natura 2000 network;

Secondary criteria:

- rarity/frequency of the habitat type;
- status as priority habitat;
- threat situation of the habitat;
- regeneration capability.

Five vulnerability classes for terrestrial habitats and two classes of marine habitats were defined (see Table 1), based on an evaluation of the nationwide stock of habitats in the Natura 2000 network.

A matrix was then established that related the vulnerability classes with 3 levels of relative area loss (level I, II and III), corresponding to 1 %, 0,5 % and 0,1 % relative loss. Thresholds of tolerable absolute area loss for each habitat class were estimated for each class of habitat and each level of relative loss s (see Table 1).

Table 1

Orientation values (OV) for absolute and relative thresholds of tolerable non-significant losses of protected habitats of Annex 1 of the Habitats Directive

In case of a relative loss:	Level	Classes of orientation values (thresholds of tolerable quantitative-absolute loss of habitat)						
		1	2	3	4	5	6a	6b
							Special Marine Class	
< 1 %	I. basic OV	0 m ²	25 m ²	50 m ²	100 m ²	250 m ²	500 m ²	0,5 ha
< 0,5 %	II. middle OV	0 m ²	125 m ²	250 m ²	500 m ²	1 250 m ²	2 500 m ²	2,5 ha
< 0,1 %	III. upper OV	0 m ²	250 m ²	500 m ²	1 000 m ²	2 500 m ²	5 000 m ²	5 ha

In practice this means that for 21 of the 91 habitat types occurring in Germany, no loss is acceptable, while for the remaining habitats some loss may be considered insignificant if the orientation values defined for each habitat are not exceeded.

Relating the absolute area loss to the relative loss implies that a larger habitat area will allow a greater absolute loss as long as it represents a smaller proportion of affected surface area. For the establishment of thresholds, the minimum viable area of habitat was considered. Orientation values for habitat loss defined for some Annex I habitat types in Germany are presented in Table 2 below.

Table 2

Orientation values for habitat loss defined for some Annex I habitat types in Germany

Code	Habitat type	Orientation value for habitat loss (in m ²)			
		class	Level I	Level II	Level III
			If loss ≤ 1 %	If loss ≤ 0,5 %	If loss ≤ 0,1 %
9110	<i>Luzulo Fagetum</i> beech forest	5	250	1 250	2 500
9130	<i>Asperulo Fagetum</i> beech forest	5	250	1 250	2 500
9170	Oak hornbeam forest	4	100	500	1 000
91E0*	Alluvial forest	4	100	500	1 000
6510	Lowland hay meadows	4	100	500	1 000
4030	European dry heaths	3	50	250	500
6430	<i>Hydrophilus</i> tall herb fringe comm.	3	50	250	500
6120*	Xeric sand calcareous grasslands	2	25	125	250
7110*	Active raised bogs	1	0	0	0
7220*	Petrifying springs with tufa formations	1	0	0	0

C. Thresholds for losses of habitats of animal species

The development of tolerable losses of the habitats of protected species was mainly based on the typical size of habitats of species and on a literature review, considering the home ranges, territory sizes and mobility of the individuals and the ranges of the populations. The species were grouped into 8 classes of average home ranges which were defined (according to Bink 1992) as: <1 ha, 4 ha, 16 ha, 64 ha, 260 ha, 10 km², 40 km², 160 km².

The 'orientation values' for the significance levels were then determined as 1/100 or 1/1 000 of the class value depending on whether the specific class was chosen for individuals or populations, respectively. For the orientation values also a combination of relative and absolute levels for losses has to be considered.

Additionally, the specific habitat use of a species has to be taken into account to determine for which parts of habitats the orientation values may be used. For highly endangered species no orientation value is given; i.e., the threshold for a significant impact is considered to be anything greater than zero.

Regarding the 53 species from Annex II, no threshold values exist for 16 of them, nor for 20 of the 98 Birds Directive species. In other words, no loss is likely to be acceptable. All these conclusions/ figures/ thresholds are intended for guidance purposes only. This means that a case-by-case approach for each appropriate assessment is still required.

D: Advantages of the standards

Since its publication, the guidance document has been successfully tested in the German courts and is now applied across the country. Based on more than ten years of experience, several advantages of this approach can be identified:

- More transparency and objectivity, a clear assessment framework for the assessment of significant adverse effects on integrity.
- Rules for the appropriate assessment are clear for everyone (proponent, consultancies, competent authority, nature conservation authority, judges/courts and public).
- Standards are guaranteeing the quality of the assessments.
- The approach might also be useful for other impacts (regarding the gradual losses).
- Provides more legal and planning certainty.

For more information regarding the development or the usage in practice and case law, see:

Lambrecht H., Trautner J. (2007): Fachinformationssystem und Fachkonventionen zur Bestimmung der Erheblichkeit im Rahmen der FFH-VP — Endbericht zum Teil Fachkonventionen, Schlusstand Juni 2007. (Expert information system and rules for significance assessment in the context of the appropriate assessment — Final report part Expert rules, final version June 2007. In German.) <https://www.bfn.de/themen/planung/eingriffe/ffh-vertraeglichkeitspruefung.html>

Bernotat, D. (2013): Appropriate Assessment: Standards of significance for more planning certainty. Presentation on Jaspers seminar on nature protection, Brussels, 10.4.2013. <http://www.jaspersnetwork.org/download/attachments/13205585/Appropriate%20assessment%20standards%20-%20Germany.pdf?version=1&modificationDate=1400316957000&api=v2>

Germany – Criteria for the assessment of mortality of wild animals in the context of projects and operations

A classification system for the importance of anthropogenic mortality on the species level was developed in Germany between 2008 and 2016. This system takes into account parameters related to population biology and nature conservation status.

First, a **Population Biology Sensitivity Index** (PSI) was developed based on parameters such as mortality rate, longevity, age of first reproduction, reproductive rate, national population size and population trend. For most parameters, measured values were translated into a scoring system reflecting the vulnerability to anthropogenic mortality starting with high vulnerability (1 point) and ending with low vulnerability (9 points).

A **Conservation Value Index** (NWI) was also created. This index takes into consideration the parameters such as 'status on the National Red List', 'abundance in Germany', 'population condition' (according to the Natura 2000 system) and 'national responsibility for the species'.

To help with carrying out species-specific assessments, both indices (PSI and NWI) were aggregated in a matrix resulting in an **Index of Mortality Sensitivity** (MGI). This index facilitates the assessment of a loss of an individual on the whole population. It allows one to detect which of the species (depending on how rare, threatened and sensitive they are) the loss of only few individuals has to be considered as significant in the context of the assessments. The MGI also allows the identification of those abundant species, which do not require a more detailed consideration regarding a project-related mortality risk, at least when only a few individuals are concerned.

In addition to the indexes, the authorities also developed instructions on how to apply the MGI in the framework of planning and impact assessment. In planning and permitting processes, risks of collision or mortality need to be considered on a project-specific basis. For instance, the mortality risk for birds from wind turbines, power lines (collision and electrocution) and traffic routes (roads and railroads) does not only differ among species, but can also depend on the type of project. The same applies to bats.

Therefore in the second step, for each species the mortality risk related to specific project types was divided into four classes for birds (collision at power lines, electrocution at medium voltage masts, collision with cars and wind turbines) and two classes for bats (collision with cars and wind turbines). This evaluation is based on an extensive literature review regarding the numbers of animals killed by each project type in Germany and Europe, as well as on knowledge about biology and behaviour of the species (e.g. mobility, home range size, flight altitude, flight behaviour, manoeuvrability, speed of locomotion, body size, wing span or vision), on published estimates of experts (including published national and international guidelines) and on own estimates. When interpreting statistics of casualties from different projects, the abundance of the respective species was also considered.

Subsequently, the mortality risk related to specific project types was combined with the general mortality sensitivity (MGI) in the form of an **index of mortality sensitivity** related to **specific project types** (vMGI).

To further illustrate this, a 'high collision risk' with power lines, wind turbines or roads does not automatically mean a 'significantly increased mortality risk' (*sensu* conservation laws) in species which show a natural mortality of 50-60 %. More drastic examples are insects (e.g. many butterflies and dragonflies), which show a high collision risk on roads, but of which 100 % of the imagines naturally die each year anyway. Those animals are adapted to high losses in their whole autecology (high natural mortality, low longevity, high reproductive rate, large population size). Thus, for short-lived species, certain anthropogenic mortality risks resulting from infrastructure are much less significant than for long-living species with low natural mortality and reproduction (k-strategists). Using the MGI-method, these autecological aspects and differences are considered in the evaluation of project-specific mortality risks.

Finally, each individual case has to be assessed in terms of the potential conflict of the project with the number of the individuals of the affected species. For this purpose a 'constellation specific risk' (KSR) is applied. The evaluation of this risk is based on area-specific information and project parameters.

In summary, the Index of Sensitivity to Mortality (MGI) cannot replace the assessment of mortality in each individual case. Instead, the differentiated classifications help to objectify the assessment of mortality risks, for example in the context of the Impact Mitigation Regulation (under the German Federal Nature Conservation Act) or the provisions of Art. 6 (appropriate assessment) and Art. 12 (species protection) of the Habitats Directive, or the provisions of the Environmental Liability Directive. The aim of the method is to provide a standardized way of assessing the impact of species mortality, and thus to increase objectivity and transparency of impact assessments.

Bernotat, D. & Dierschke, V. (2016): Übergeordnete Kriterien zur Bewertung der Mortalität wildlebender Tiere im Rahmen von Projekten und Eingriffen. 3. Fassung – Stand 20.9.2016. – Leipzig (Bundesamt für Naturschutz), 460 S. <https://www.bfn.de/themen/planung/eingriffe/besonderer-artenschutz/toetungsverbot.html>

Italy. National Guidelines for assessments in accordance with Article 6(3) and (4) of the Habitats Directive

Italy has recently published national guidelines, which describe the procedures for the screening, the appropriate assessment and the implementation of derogations, in accordance with Article 6(3)-(4) of the Habitats Directive.

The document was prepared by a working group formed by representatives of national and regional authorities and public administrations competent in the field of impact assessment. It takes into account the suggestions received during the Fitness Check and the update of the guidance on Article 6 by the Commission.

The guidelines are aimed at harmonising at national level the implementation of Article 6(3)-(4). They promote the inclusion of plans, programmes, projects, interventions and activities (P/P/P/I/A), not only plans and projects, in the procedure. A 'screening format' is provided in order to ensure a uniform approach at this stage and the use of standard evaluation criteria at the national level. A 'developer format' has also been prepared for the presentation of the relevant information on the P/P/P/I/A. With regard to the appropriate assessment, the guidelines contain detailed specifications on the contents and the information to consider, specific provisions and elements for the study and for the qualitative and quantitative analysis of the significance of the effects on Natura 2000 sites.

Concerning the derogation pursuant to Article 6(4), the guidelines address the evaluation of alternative solutions in a dedicated chapter. The guidelines emphasise that this evaluation remains formally, and in all cases, a pre-requisite to allow the exemption procedure provided for by Article 6(4), although in it is believed that, within the framework of an appropriate assessment, it should also provide the possibility of directing the proposal towards solutions with a lower environmental impact.

The guidelines also describe the criteria for verifying the imperative reasons of overriding public interest (IROPI), the methods for identifying and implementing appropriate compensation measures, as well as clarifications relating to their verification and the notification process to the European Commission by filling in the appropriate form. On compensation measures, minimum compensation ratios are proposed as follows: 2: 1 ratio for priority habitats and/or species of Community interest (also valid for habitats of priority species); 1,5: 1 ratio for habitats and/or species of community interest (also valid for species habitats); 1: 1 ratio for additional habitats, species or species habitats.

<https://www.gazzettaufficiale.it/eli/gu/2019/12/28/303/sg/pdf>

ASSESSMENT OF SIGNIFICANCE OF EFFECTS ON THE NATURA 2000 SITE

(PART OF THE SCREENING FORMAT INCLUDED IN NATIONAL GUIDELINES IN ITALY)

1. HABITATS OF COMMUNITY INTEREST

Habitats of Community interest (Annex I HD) concerned by the proposal:

—

—

Possible loss of habitats of Community interest:

— Habitat code:

— repeat for each habitat involved

☐ No

☐ Yes

☐ Permanent

☐ Temporary

Possible fragmentation of habitats of community interest:

— Habitat code:

— repeat for each habitat involved

☐ No

☐ Yes

☐ Permanent

☐ Temporary

2. SPECIES AND HABITAT OF SPECIES OF COMMUNITY INTEREST

Species of Community interest (Annex II HD and Art.4 BD) concerned by the proposal:

—

—

Possible disturbance of species of Community interest:

— Species:

— repeat for each species involved

☐ No

☐ Yes

☐ Permanent

☐ Temporary

Possible direct/indirect loss of species of Community interest (repeat for each species involved):

— Species:

— Number of individuals, pairs,... from SDF

☐ No

☐ Yes

Estimate (no. of individuals, pairs...) lost

Possible loss/fragmentation of species' habitats:

— Species:

— Type of species' habitat:

☐ No

☐ Yes

☐ Permanent

☐ Temporary

(repeat for each habitat of species involved)

3. CUMULATIVE IMPACT ASSESSMENT

Can other P/P/I/A cause significant cumulative and/or synergetic effects on the Natura 2000 site concerned jointly with the proposal in question?

☐ Yes ☐ No

If Yes, indicate which other P/P/I/A and describe how they will significantly affect the site, together with the proposal under consideration:

.....

.....

4. INDIRECT EFFECTS EVALUATION

Can the proposal have indirect effects on the Natura 2000 site?

☐ Yes ☐ No

If Yes, indicate which ones:

.....

.....

5. ASSESSMENT SYNTHESIS

The P/P/P/I/A can cause direct, indirect, and/or cumulative effects, even potential, on habitats of community interest?

☐ Yes ☐ No

If Yes, why:

.....

The P/P/P/I/A can cause direct, indirect, and/or cumulative effects, even potential, on species of community interest?

☐ Yes ☐ No

If Yes, why:

.....

The P/P/P/I/A can **cause direct, indirect, and/or cumulative, even potential, impacts on the integrity of the Natura 2000 site (s)?**

☐ Yes ☐ No

If Yes, why:

.....

6. CONCLUSION OF THE SCREENING

Conclusions and motivations (reasoned opinion):

.....

7. RESULT OF THE SCREENING:

<input type="checkbox"/>	Positive: No need for Appropriate Assessment	<input type="checkbox"/>	Negative: Appropriate Assessment is required
--------------------------	---	--------------------------	--

Source: Guidelines for evaluation of effects on Natura 2000 sites (Italy). *Linee guida nazionali per la valutazione di incidenza (VInCA)*. Direttiva 92/43/CEE 'Habitat' art. 6, paragrafi 3 e 4. Gazzetta Ufficiale della Repubblica Italiana, 2019.

1.3. Appropriate assessment of a national electricity programme in Ireland – assessment of cumulative effects

The Grid25 Implementation Programme (the IP) is a plan for the development of the electricity network in Ireland until 2025. It aims to ensure a long-term sustainable and reliable supply from renewable and conventional sources to the cities, towns, villages, homes and other key markets where the power is required.

The main provisions of the IP until 2025 include:

- upgrading 2 530 km of the existing network and
- building 828 km of new infrastructure.

As a high-level strategy, the Grid25 IP, provides an indication of the types of infrastructural requirements likely to arise in the future, given government policy on renewable energy and predicted growth in demand, but does not prescribe exactly the location of infrastructure such as generation plants or transformers, or the route of transmission lines. Instead, it provides an indicative overview of the general approach proposed for the future development of the grid.

The programme has been subject to an **appropriate assessment** according to Article 6(3) of the Habitats Directive. As the IP applies to the entire Republic of Ireland and may have synergistic effects beyond Ireland's borders, a screening exercise was carried out on all Natura 2000 sites within the Republic and Northern Ireland.

A preliminary examination of the types of effects that may arise as a result of the IP was carried out. The type of impact depends on the type of infrastructure constructed, including:

- Site based infrastructure e.g. electricity generating stations, transformers, etc.
- Linear infrastructure e.g. overhead lines, underground cables.

Impacts that could potentially occur through the implementation of the IP were categorised under a number of headings:

- loss/reduction of habitat area;
- disturbance to key species;
- habitat type or species habitat fragmentation;
- reduction in species density;
- changes in key indicators of conservation value such as decrease in water quality and quantity.

Due to the nature of the IP, impacts were described in a general manner but were specifically identified for any of the sites that were screened in. The screening process identified approximately 340 SACs and 97 SPAs that could potentially be either directly or indirectly impacted through the development of infrastructure proposed by the IP. A further 18 SACs and 2 SPAs in Northern Ireland may be affected by cross border interconnectors.

The appropriate assessment then considered the potential adverse effects occurring as a result of the application of the IP alone or in-combination with other plans, programmes and/or projects. The assessment of cumulative impacts was firstly addressed in order to make sure that they were properly considered when assessing the potential significant effects of the IP.

Assessment of cumulative effects

The assessment identified the principal plans, policies and programmes (at national, regional and county level) that are likely to give rise to developments causing effects that could combine or interact with those of the IP for Grid25. This analysis required knowledge of the likely effects of all plans/developments under consideration, and despite the limitations in the information about the likely effects of some plans, it could identify the interactions resulting in cumulative impacts for some plans. A few examples are provided in the table below.

Policy, plan, programme or projects	Interactions resulting in cumulative impacts
National (example)	
Transport 21 Programme	<p>Potential in-combination impacts may arise where new or upgraded transport corridors are constructed in line with new or upgraded transmission infrastructure. Impacts may include the following:</p> <ul style="list-style-type: none"> — Habitat loss and disturbance. All terrestrial based designated sites may be affected, depending on where infrastructure and transmission lines are located/routed. — Alterations to local hydrology and effect on adjacent habitats. Groundwater dependant habitats such as fens, turloughs and bogs are most likely to be affected. — Sediment pollution and associated hydrological impacts where surface water dependant species and habitats are affected. Salmon, lamprey, white clawed crayfish and freshwater pearl mussel may potentially be affected.

Policy, plan, programme or projects	Interactions resulting in cumulative impacts
	<ul style="list-style-type: none"> — Contamination of surface and groundwater with pollutants (e.g. fuels, lubricants, concrete) during construction. Salmon, lamprey, white clawed crayfish and freshwater pearl mussel may potentially be affected. — Disturbance of species during construction and maintenance activities. Species that may be affected include nesting and overwintering birds in coastal and freshwater SPAs; otters and kingfishers, where development occurs adjacent to or crossing watercourses; bats, where development affects woodlands, hedgerows or roosting sites. — Risk of bird strike where overhead transmission cables are installed near SPAs or across bird flight lines.

Regional (example)

Regional waste management plans	Potential in-combination impacts may arise where new waste infrastructure and new transmission infrastructure occur together within or in close proximity to a designated site. Likely significant impacts are as previously outlined.
--	--

County (example)

County and town development plans	Potential in-combination impacts may arise where there is a requirement to provide for new infrastructure through implementation of county and town development plans. Provision of related transmission infrastructure may result in likely significant impacts as previously described.
--	---

Projects

Offshore energy generation projects	<p>In-combination impacts may arise at the interface between offshore and on shore infrastructure. Impacts that may occur include:</p> <ul style="list-style-type: none"> — Habitat loss and disturbance. All terrestrial based designated sites may be affected, depending on where infrastructure and transmission lines are located/routed. Loss of habitats may also occur in the littoral and coastal zones. Habitat loss will be grater where underground cables are installed. — Sediment pollution and associated hydrological impacts where surface water dependant species and habitats are affected. Salmon, lamprey, white clawed crayfish and freshwater pearl mussel may potentially be affected. — Contamination of surface and groundwater with pollutants (e.g. fuels, lubricants, concrete) during construction. Salmon, lamprey, white clawed crayfish and freshwater pearl mussel may potentially be affected. — Disturbance of species during construction and maintenance activities. Species that may be affected include nesting and overwintering birds in coastal and freshwater SPAs; marine mammals, where interconnection between offshore and onshore infrastructure occurs; otters and kingfishers, where development occurs adjacent to or crossing watercourses; bats, where development affects woodlands, hedgerows or roosting sites.
--	---

The assessment concluded that development of a new energy generation infrastructure when combined with other economic developments will potentially lead to habitat and/or species loss, species/population fragmentation and changes in water quality/quality. These potential conflicts could be mitigated by measures outlined later in the appropriate assessment and they would be addressed by lower tier environmental assessment, as appropriate.

Assessment of potential significant effects and proposal of mitigation measures

As previously mentioned, the Grid25 Implementation Programme provides an indicative overview of the general approach proposed for the future development of the grid and does not prescribe exactly the location of infrastructure. As such, this has the effect of limiting the level of assessment that can be undertaken and means that the assessment of potential significant effects has to be made in general terms. A general examination of impacts and sensitivities was therefore carried out. The assessment identified the types of impacts on the habitats and species affected that could be envisaged for the following main components of the IP:

- overhead transmission lines;
- underground cables;
- construction of new substations and extension of existing substations;
- reinforcement of the transmission system in the regions.

For the latter, the main sensitivities in each region were identified and recommendations to avoid the expected impacts were outlined (e.g. avoidance of certain particularly sensitive areas in the reinforcement of the transmission system in the region, encourage to locate sub-stations and overhead routes on urban land, or in areas that contain dense corridors of anciently established settlement while avoiding more sensitive upland interiors etc.).

The assessment also identified the impacts for a number of network developments that have progressed to detailed design stage (although the location and route of these projects is not fixed yet) on the Natura 2000 sites located in their proximity and therefore having potential to be affected by the individual projects in question.

Due to the strategic nature of the Grid25 IP, it could not be conclusively stated at that stage that the IP will not adversely affect the integrity of the Natura 2000 network. Therefore, mitigation measures were proposed to ensure that significant impacts are avoided.

Two levels of mitigation measures have been proposed. The first level of measures will guide the strategic approach to mitigating impacts and the second level of mitigation measures are more impact specific and shall be applied where significant impacts are identified following project level environmental impact assessment (EIA) and appropriate assessment.

General mitigation measures are outlined for the main categories of impact identified and for the main habitats and species potentially affected. For instance, regarding general habitat loss and disturbance, avoidance and mitigation measures are described for bogs and peatland areas, birds, bats, otters, water dependant habitats and species, freshwater pearl mussel, other protected species, etc.

The consideration of mitigation measures will prioritise the avoidance of impacts in the first place and mitigate impacts where these cannot be avoided. In addition, all lower level projects arising through the implementation of the IP will themselves be subject to appropriate assessment when further details of design and location are known.

Having incorporated mitigation measures, it is considered that the Grid25 Implementation Programme will not have a significant adverse effect on the integrity of the Natura 2000 network. Nevertheless, all the projects to be implemented in the framework of the IP will be screened and subject to appropriate assessment as required.

Source: Natura Impact Statement in support of the Appropriate Assessment of the Grid25 implementation programme. Available at:

<https://www.eirgridgroup.com/site-files/library/EirGrid/Natura-Impact-Statement-in-Support-of-the-Appropriate-Assessment-of-the-Grid25-Implementation-Plan.pdf>

2. IMPERATIVE REASONS OF OVERRIDING PUBLIC INTEREST (IROPI)

2.1. Examples of various types of IROPI and their justification

Article 6(4) of the Habitats Directive:

'If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for *imperative reasons of overriding public interest*, including those of *a social or economic nature*, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to *human health or public safety*, to *beneficial consequences of primary importance for the environment* or, *further to an opinion from the Commission*, to *other imperative reasons of overriding public interest*.'

I. IROPI of a social or economic nature (site with non-priority target features)

Project: Proposed Upgrade to an existing Water Treatment Plant at Lough Talt, Co. Sligo (Ireland, 2019).

Project and Natura 2000 site description:

Since the 1950s, an upland lake Lough Talt, part of SAC IE0000633 Lough Hoe Bog, has served as a source of water for a population of more than 13 000 inhabitants via a single Water Treatment Plant (WTP). An upgrade of the WTP is required to provide a consistent supply of potable drinking water, matching the current abstraction levels. The hydrogeological investigations concluded that, during periods of extended dry weather, the lake abstraction operation contributes to a significant drop in lake level which has an adverse impact on the habitat of the Geyer's Whorl Snail *Vertigo geyeri*. To avoid this impact it would be necessary for the abstraction to be reduced by approximately 50 % during a significant portion of the year.

Although *V. geyeri* has not been recorded at the site since 2007, its population is considered important at the country scale and has to be restored. The proposed conservation measures will improve the habitat conditions through a system of irrigation and rewetting. They do not however mitigate for the historical loss of the species due to abstraction pressures. The proposed project will continue to change the abiotic and biotic dynamics that define the structure and function of *V. geyeri* population, thus causing delays in achieving its conservation objective.

Alternative solutions:

Seven alternatives including the 'do nothing' scenario (option zero) were assessed according to their health, social, and ecological impacts. The only available option in the immediate short term is to provide upgraded treatment at the existing WTP site to improve the treatment barrier against parasitic protozoans and the exceedances in environmental pollutants trihalomethanes (THM). This upgrade will provide water that is safe to drink to the local population for approximately 7-10 years while a long-term sustainable solution is developed and implemented.

IROPI justification:

Provide safe and reliable drinking water to a population of more than 13 000.

Proposed compensatory measures:

The restoration of a sustainable population of Geyer's whorl snail to the SAC is proposed through a detailed programme of temporary irrigation of the key calcareous fen habitat until the abstraction pressure is removed from the site. In conjunction with the irrigation management, ongoing monitoring of the irrigation system function and staged translocations of snails to the fen habitat are proposed over a four year period, starting with less sensitive species and culminating in the translocation of *Vertigo geyeri* from another SAC where it has a favourable conservation condition.

II. *Justification of IROPI: protection of lives and property*

Project: Implementation of a dirigible flood protection polder Rösa (Germany, 2014).

Project and Natura 2000 site description:

The aim of the project is to upgrade the current flood protection structures of a dry polder next to the village of Rösä up to HQ₂₀₀ (the peak level at maximum discharge occurring once within a 200-year period) protection level. Main elements of the project consist of: about 7,5 km of restored dykes 5 m wide at the bottom and 3 m wide on the crest; new influx and discharge installations; and two flood protection walls 1 225 m and 310 m long. The current dykes ensure protection against HQ₁₀₀ only, but due to unpredictable extreme weather events, floods exceeding this level are likely and could seriously damage settlements and industry located downstream of the current polder.

The project is to be constructed within the SAC DE4340301 Muldeau oberhalb Pouch, affecting the following target habitat types through direct land take: 6430 – 604 m² (0,17 % of the area of this habitat type within the SAC); 6510 – 40 665 m² (20,33 %); 91F0: 456 m² (0,46 %). According to the official German methodology for assessing impact significance, all these impacts are considered 'significant' (including those with apparently negligible land take, as many factors other than the mere percentage of land take are considered).

Alternative solutions:

No project alternative exists due to the character of the river valley; however, the search for alternatives resulted in many smaller adjustments being made to the project which would reduce its adverse effects (such as e.g. change in dyke slope inclination enabling reestablishment of grasslands, tiny relocations of dykes and walls, etc.).

IROPI justification:

Construction of the polder dyke is necessary in order to increase the dyke's safety as well as protect the population from floods. Therefore, the main IROPI justification is linked to the public safety and human health.

Proposed compensatory measures:

Habitat type 6430 will be created inside the SAC in a ratio 1 : 8. Habitat type 6510 will be re-created on the slopes of the dyke mostly outside the SAC in a ratio 1 : 5. The lost forest habitats 91F0 (having a quality 'D') will be compensated by planting of a new forest with the same species composition in a ratio 1 : 4 as well as planting a tree 'mantle' along existing forests in a ratio 1 : 16, all mostly outside the site. To maintain the network coherence, the SAC area will be increased to embrace the locations of compensatory measures.

III. *Justification of IROPI: other reasons including social and economic ones*

Project: Public works for a high-speed train between Tours and Bordeaux (France, 2013).

Project and Natura 2000 site description:

The project is for a new high-speed train line between Tours and Bordeaux. This includes the laying of a new line (302 km) and its connection to existing railway lines (38 km), as well as lateral pathways, basins, electricity facilities, over and underpasses (for agriculture paths, fauna passages), working platforms, and ancillary facilities.

The route is to cross four SPAs (FR5412006 Vallée de la Charente en amont d'Angoulême, FR5412018 Plaines du Mirebelais et du Neuvilleois, FR5412021 Plaines de Villefagnan, FR5412022 Plaine de la Mothe St Héray Lezay) and two SACs (FR5402010 Vallée du Lary et du Palais, FR5400405 Coteaux calcaires laine de la Mothe St Héray Lezay). Adverse effects consist of the likely destruction of 1,9 ha of wet meadows and 4,2 ha of secondary habitats important for conservation of the Corncrake *Crex*. It will also directly affect 185 ha and indirectly (disturbance) affect 2 947 ha of potential habitats of Little Bustard *Tetrax tetrax*; lead to the destruction of 2 ha of habitat (wet heathland) of False Ringlet *Coenonympha oedippus*; as well as the destruction of 0,35 ha of one of the best occurrences of 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) and fragment the local connectivity of this habitat.

Alternative solutions:

Three alternatives for the route were assessed. With regard to the high-speed line, there is not much flexibility to introduce partial shifts of the route; and it was concluded that the chosen alternative has the least adverse impacts on Natura 2000 sites while being still technically feasible.

IROPI justification:

With 340 km of new line between Tours and Bordeaux, this high-speed line (TGV) is one of the most important railway projects on a European scale. It will create an efficient link on the Atlantic coast to meet the growing demand for mobility. With a commercial speed of 300 km/h, it will make it easier for travellers to travel and improve service to towns on the route. Barely more than two hours to connect Paris to Bordeaux, the competitive advantage of rail transport over air transport becomes decisive, thus promoting modal shift. This project will play an essential role in strengthening the trans-European axis connecting, via the Atlantic coast, the regions of N and E Europe to the SW of France and the Iberian Peninsula.

It will also boost the activity of the territories concerned: improving competitiveness and expanding markets for regional businesses; facilitation of travel for activities requiring high mobility, a major argument for a new establishment or relocation from Paris to the regions; development of tourism, in particular short-term stays; creation of jobs, during construction and operation; development major urban projects. For travellers, the train is a fast and comfortable means of transport, 34 times safer than the car. A TGV can transport up to 1 000 passengers at 300 km/h. It is also an energy-efficient and space-saving mode of travel.

The high-speed train has a key role to play in reducing the energy bill and developing regions sustainably. It produces 20 times less greenhouse gases than the car and 45 times less than the plane. It does not generate any local atmospheric pollution: electric trains provide 90 % of the traffic. For the community, the cost of transporting passengers or goods in terms of pollution, accidents and climatic impacts is 4,5 times higher by road than by rail.

Proposed compensatory measures:

35 ha were purchased for the Corncrake to compensate the 6,1 ha of habitat loss. For Little bustard, the compensation scheme in three SPAs will comprise 702 ha: 160 ha will be purchased and 542 ha will have a management contract with measures in line with the management plans for SPAs. A monitoring programme is foreseen and a private body will participate in a reintroduction programme. 5 ha of land with the habitat type 6210 will be purchased (compensation 1 : 14).

IV. *Justification of IROPI: other reasons further to an opinion from the Commission*

Project: Deepening the Danube waterway between Straubing and Vilshofen; section Straubing-Deggendorf (Germany, 2019).

Project and Natura 2000 site description:

On Danube River between Straubing – Deggendorf (about 40 km), the conditions for navigation during the low water periods (draught 2 m) were never put in place, contrary to the section up- (2,90 m) and downstream (2,70 m) making this a bottleneck. The draught of 2,50 m can only be reached on middle water, which is available for only 144 days/year. The aim of the project is to overcome this obstacle to navigation, and to build improved flood protection measures. The final design will result in the deepening of the riverbed by 20 cm to -2,20 cm, as compared to today's low water stand of -2,00 m. It will also further deepen the riverbed by 45 cm to -2,65 cm. in a 9,7 km long section. Meanwhile the flood protection measures should provide protection against Q₁₀₀ (the maximum discharge occurring once within a 100-year period).

The project section of Straubing-Vilshofen has the highest number of accidents due to the current profile of the ship fairway. The study puts the number of accidents at 39 per year (2004), increasing to 55,4 by 2025 due to the increasing volume of transport.

The project will affect a large SAC (4 720 ha) DE7142301 Donauauen zwischen Straubing und Vilshofen. Likely significant impacts, both direct, indirect and in-combination, were identified on 7 fish species, 1 butterfly species and 1 mollusc species and 7 habitat types, including the priority 91E0* alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*.

Alternative solutions:

In addition to the selected project design, four other alternatives as well as zero alternative were thoroughly assessed. None of the alternatives would give rise to a significantly lower impact than the chosen option because they would either cover a larger area of the SAC than the proposed project or would significantly affect a larger habitat for protected species.

IROPI justification:

- (a) Meeting the objective of national and European transport policy: Deepening the Danube between Straubing and Vilshofen closes a gap in the existing waterway connection linking the North Sea to the Black Sea via the Rhine, the Main, the Main-Danube Canal and the Danube. Under the EU Regulation (EU) No 1315/2013 on Union guidelines for the development of the trans-European transport network, the Danube federal waterway forms part of the core network of the European TEN-T network, and is of high economic interest for Europe.
- (b) Better connectivity for inland ports: The project will improve navigation conditions in the project area when water levels in the Danube are low. Unlike other modes of transport, shipping on the Danube still has free transport capacity, which could be used more efficiently by deepening the ship fairway.
- (c) Safety and ease of navigation: The implementation of the project could reduce the frequency of accidents from anticipated 55,4 to 42,4 per year, despite the increase in traffic.
- (d) Predicted increase in transport: The freight volume is expected to increase from 7.0 million tonnes/year (2007) to 9,7 million tonnes/year by 2025 or to increase by 50 % to 10,5 million tonnes/year.

Proposed compensatory measures:

All habitat types affected, including the priority one 91E0*, will be compensated by creation of new habitats at a ratio of 3:1. For *Maculinea nausithous*, new grassland habitats will be created, as well as new habitats for *Unio crassus* in a form of new river islands and river branches (the latter serving also the affected fish species). Long-term monitoring and conservation management of new habitats is envisaged.

Commission's opinion (full version published at: https://ec.europa.eu/environment/nature/natura2000/management/opinion_en.htm):

3. COMPENSATORY MEASURES

3.1. Examples of compensatory measures under Article 6(4)

Plan or project	Long distance railway line between two nodes and renewal of a 100 yr old bridge in Baden-Württemberg (Germany). The project includes surface alignments mitigated with tunnelling.
Natura 2000 site affected	The site affected is DE 7220-311 'Glemswald und Stuttgarter Bucht' (3 813 ha, with 31 sub-fragmented areas).
Impact	Impacts result from land take and subsequent habitat loss and degradation including mature tree felling. The assets of Community interest affected are: <i>Species:</i> population of Habitats Directive Annex II priority species <i>Osmoderma eremita</i> in favourable conservation status. <i>Habitat:</i> 6510 Lowland hay meadows (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>)

Compensatory measures	<ul style="list-style-type: none"> — Designation as Natura 2000 of 50 ha of land near a national nature reserve (<i>Neuweiler Viehweide</i>). — Management of the designated area targeted to <i>*Osmoderma eremita</i> by regenerating the essential ecological features required for the species' survival. <p>The managed designated land connects two existing core protected sites that were isolated, with ecological border effect on the priority species. The outcome of targeted management is expected to retain favourable conservation status for the priority species.</p>
------------------------------	--

Source: C(2018) 466 final 30.1.2018

Plan or project	Road B173 between localities in Bavaria (Germany)
Natura 2000 site affected	<p>The site affected is DE 5833-371 Maintal von Theisau bis Lichtenfels SCI (872 ha), largely coincident with an SPA DE 5931-471.02 Täler von Oberem Main, Unterer Rodach und Steinach.</p> <p>The SPA area is more affected in area than the SCI. The site's functionality is linked to 9 other Natura 2000 sites in the Continental biogeographic region. The sites consist of floodplain habitats with stagnant and running waters.</p>
Impact	<p>The road alignment intersects the Natura 2000 network and impacts through land take (habitat loss) and disturbance/degradation to habitats and species during construction and operation of the road, mainly as a result of nitrogen deposition. In detail:</p> <p>Annex I habitat types affected by the project: 6, of which one priority (91E0*).</p> <p>Annex II species affected: 5, of which 3 also Annex IV.</p> <p>Significant impacts on:</p> <p>Habitats Directive Annex I habitat types 3150, 6430, 6510, and 91E0*</p> <p>Birds Directive Annex I bird species <i>Circus aeruginosus</i></p>
Compensatory measures	<p>Proportionality in compensation to balance habitat loss within the overall coherence of the Natura 2000 network has been decided at:</p> <p>1:3 ratio for habitat types 3150, 6430 and 91E0*</p> <p>1:6 for 6510.</p> <p>Enlargement of the SCI by 2 ha.</p> <p>Creation of <i>reedbed</i> habitat area for <i>Circus aeruginosus</i>.</p> <p>Financial plan and monitoring and evaluation plan.</p> <p>The European Commission makes this compensation plan conditional on:</p> <ul style="list-style-type: none"> — Implementation according to the work plan presented to the European Commission by the German authorities. — Monitoring and evaluation reports according to the work plan presented as agreed by the German authorities. The report must be made available to the public on the internet. — The results of monitoring and evaluation for the Natura 2000 network must be taken into account in order to foresee evaluation and review of the compensatory measures and of the mitigation measures link to the project. — Germany fulfils the commitments concerning the Natura 2000 network for site DE 5833 – 371 as per Article 4(4) and Article 6(1) of the Habitats Directive.

Source: C(2015) 9085 final 18.12.2015

Plan or project/	<p>National Road B 252/B 62; 17,56 km of new road to bypass the municipalities Münchhausen, Wetter and Lahntal (Hesse).</p> <p>North-south connection between the regions Paderborn-Korbach and Marburg-Gießen. The National Road B 62 links Biedenkopf via Cölbe to the long-distance axes Gießen-Marburg-Kassel.</p> <p>The new alignment entails resizing and relocation of public infrastructure, such as communal roads, energy grids, a railway and a gas pipeline.</p>
Natura 2000 site affected	<p>The scope of the appropriate assessment included several Natura 2000 sites. The conclusions were:</p> <p>Site DE 5017-305 'Lahnhängen zwischen Biedenkopf und Marburg': not adversely affected by the project.</p> <p>Site DE 5018-401 'Burgwald': positively affected by the project because the project will be further away from the site and will reduce most of the traffic load of the existing National Road B 252.</p> <p>Site DE 5118-302 'Obere Lahn und Wetschaft mit Nebengewässern': there will be significant impacts on this site.</p>
Impact	<p>The route alignment of the National Road B 252/B 62 intersects the Natura 2000 network at three locations. The direct pressures are habitat loss and habitat degradation; there are barrier effects and nitrogen deposition that have general effects on habitats and species through habitat disturbance and degradation. The assets subject to significant consequences out of these impacts are:</p> <p>— Habitats Directive Annex I habitat types</p> <p>91E0* (alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>)</p> <p>3260 (water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation)</p> <p>— Habitats Directive Annex II species</p> <p><i>Cottus gobio</i> and <i>Lampetra planeri</i></p> <p>All Annex I habitat types and other habitats of species are subject to significant impact as a result of increased levels of nitrogen deposition. Increased sediment loads have adverse significant effects on all water-living species. The most significant damage, direct and indirect, is on habitat type 91E0* through fertilizing and acidifying by nitrogen gases.</p>
Compensatory measures	<p>Loss of habitat type 91E0* alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i>:</p> <p>Compensation of the direct impacts: ratio 1:3.</p> <p>Compensation of the indirect impacts: ratio 1:2.</p>

Source: C(2012) 3392 of 29.5.2012

Plan or project/	<p>Deepening and widening of the ship fairway of the river Main at the sections Wipfeld, Garstadt and Schweinfurt (Bavaria/Germany)</p> <p>The main purpose of the project is to widen the existing fairway of the river Main between the floodgates Wipfeld (milestone km 316,12) and Ottendorf (milestone km 345,29) from 36 m to 40 m and to deepen the river's waterway from currently 2,50 m to 2,90 m. This will increase the physical manoeuvrability of boats.</p>
-------------------------	---

Impact	The priority habitat type of Community interest 91E0* Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> and the habitat type 6510 Lowland hay meadows would be particularly affected. Both habitat types would be damaged directly involving a surface loss of 9 460 m ² for 91E0* and 6 440 m ² for 6510.
Natura 2000 site affected	The scope of the appropriate assessment included a sub-network of the Natura 2000 network neighbouring the watercourse. The AA conclusions per Natura 2000 site were: Site 'Maintal zwischen Schweinfurt und Dettelbach' (SPA): no significant effects. Site 'Mainaue zwischen Grafenrheinfeld und Kitzingen' (SCI): significant effects. Site 'Maintal bei Sennfeld und Weyer'(SCI): significant effects. The sites significantly affected have a dimension of 1 706 ha.
Compensatory measures	Proportionality was agreed at: Habitat type 6510: proportion of almost 1:7 Habitat type 91E0*: proportion of almost 1:4 In the latter case, the proportions take into account that the habitat re-creation period may last several decades. The compensation area is local, since the ecological functionality required is found nearby. The affected Natura 2000 sites will be enlarged by the proposed compensatory measures and subsequently designated and notified by the Member State. In total, 10 measures are foreseen in the flooding area Schweinfurt and Wipfeld.

3.2. Time-related aspects of compensation measures

Germany – Time-related aspects of compensation measures (extract from LANA 2004) ⁽⁴⁾

Measures to ensure coherence should, if technically feasible, already be executed and functional when the damage occurs. According to the EU Commission, the recreation of a suitable habitat for the affected species can only be accepted as a measure to ensure coherence if 'the created site is available at the time when the affected site loses its natural value' (European Commission 2000:49).

There is therefore broad consensus among experts that the measures to ensure coherence should be carried out already prior to the implementation of the project (start of construction), or at least prior to the commencement of the considerable impairment of the relevant Natura 2000 site, so that they are ready to use and as functional as possible at the time of the damage occurring (e.g. Baumann et al. 1999:470, AG FFH Verträglichkeitsprüfung 1999:72, Ssymank et al. 1998:39, Weyrich 1999:1704, European Commission 2000:49, Schrödter 2001:17, FGSV 2002:18, Bernotat 2003:25).

In this regard, the Federal Administrative Court (judgment of 17.5.2002) also refers to the danger of a 'time-lag in functionality'. The EUROPEAN COMMISSION (2000:50) requires that the result of the measure must as a rule be operational when damage occurs on the site connected with the project, unless it can be proven that this simultaneity is not necessary to ensure the site's contribution to the Natura 2000 network.

⁽⁴⁾ LANA / Permanent LANA committee 'intervention regulation' (2004): Technical requirements for measures to ensure coherence pursuant to Article 34 para. 5 Federal Nature Conservation Act (BNatSchG). – Annex to TOP 4.6 of the 87th LANA meeting on 4/5 March 2004.

Certainly, these time-lags in functionality can only – if at all – be tolerated if it can be expected with certainty that the measures carried out will result in the required compensation and hence in the restoration of coherence (RAMSAUER 2000:608).

In each individual case, therefore, there must be an examination into whether, in the context of the ecological coherence of Natura 2000, these time-lags in functionality can be tolerated or not. The following describes the case constellations of this (case A: complete functionality of the measures for ensuring coherence necessary at the time of the impairment; case B: at the time of the impairment, full functionality of the measures not necessary).

If time-lags in functionality cannot be reconciled with the respective conservation objective, recognition as a measure for ensuring coherence must be withheld.

Case A: Complete functionality of the measures for ensuring coherence necessary at the time of the impairment.

The habitat type or the habitats needed by a species must be fully functional before the impairment occurs, especially if there is a danger of losing a relevant (partial) population of a species protected under Annex 2 of the FFH Directive or Annex 1 of the Birds Directive. In such cases, only measures implemented in advance which are already effective at the time of the intervention can be considered as sufficient measures for ensuring coherence. For reasons of nature conservation a time-lag in functionality cannot be tolerated.

Essentially, the length of time habitats of species need to develop depends, on the one hand, on the local development periods of the relevant habitats and, on the other, on the accessibility of areas in the framework of the necessary repopulation. The potential of species for repopulation is determined among others by the spatial distribution of the species, the occurrence of concrete centres of distribution and source populations in the geographical vicinity, species-specific mobility and ability to spread, and unhampered accessibility of the areas.

If an intervention affects heavily isolated occurrences of a species or species with little mobility, there is a very low potential for the habitat created by coherence measures to be newly populated or repopulated from outside. Here it is of key significance that the habitats are developed in advance as close as possible to the affected population and that the same individuals or populations can already populate the habitat prior to the intervention as an escape habitat. Repopulating the habitat at a later period can often no longer be absolutely guaranteed following the considerable impairment of the population.

In the case of habitat types, development times for the habitats are determined by their regeneration capacity and by the abiotic site conditions to be created and by colonisation by characteristic plant and animal species (cf. e.g. RIECKEN et al. 1994:21ff). Full functionality in the sense of Case A can only be achieved for habitat types which have shorter development times.

Advance implementation of measures

In order, in case A situations, to remain able to act, it must already be possible to finance and implement the measures before final authorisation of the project (...). In practice, there is e.g. the possibility here of securing the area already before the planning approval decision by preparatory land acquisition or early land acquisition. In principle, step-by-step procedures offer more favourable conditions for this.

Because of the special legal security requirement of the later approval decision, in the preliminary procedure of an FFH impact assessment (e.g. for the line determinations or in spatial planning procedures), the main decisions on the subject, location and extent of the measures for ensuring coherence must often already be taken at the draft stage. (cf. e.g. KÜSTER 2001). If the structure of the project remains the same, these will not essentially change in the course of the project authorisation; the measures can be implemented in advance as soon as the fundamental achievability of the project becomes apparent.

Instruments for stocking areas and compensation measures which have already been established in other contexts also show that an earlier implementation of the measures is possible and can be put into practice from a planning point of view (cf. e.g. AMMERMANN et al. 1998, BUNZEL & BOHME 2002). As a supplementary possibility here, agreements could also be made between the project operator and the operator of a land reserve. These agreements would allow for the measures carried out to be taken over by the operator of the land reserve and financially compensated in the unlikely event that the project could not, for some unforeseen reason, be realised after all.

The following example of the planning of the A 26 also shows that, in addition to the possibility of preparatory land acquisition, it is also appropriate to use the planning and approval stages in phases of building for the advance implementation of measures.

Example: Advance implementation of measures in the case of the A 26

The bird protection area impacted by the project is affected and impaired by several connected construction sections. During authorisation of the current building phase, measures for ensuring coherence are already being established which in part are only due to impairments arising out of the two following phases, for which no planning approval decision has yet been made. To allow measures for the creation of new habitats to develop their effectiveness, verification that the extent of the measures as required under the appropriate assessment has been laid down must already be provided in the planning approval for this building phase. Implementation of the measures is in this way brought forward by around five years, thus avoiding a time lag between the impairment and the compensatory function.

The prerequisites for this are the availability of land areas on the scale designated necessary by experts, agreement of management restrictions for the farmers working there and where necessary the availability of funds for advance compensation paid well before the approval decision for the following building phase. The chances of such framework conditions for implementation occurring must certainly be interpreted on a case-by-case basis. In the A 26 project, such conditions are clearly present. A preparatory land acquisition made it possible to secure the areas. The approach selected in this procedure is welcome, as it prevents the threat of temporary functional deficiencies and ensures the uninterrupted coherence of the Natura 2000 network during the entire project without causing any delays to the project.

Where necessary, it is also possible to have separate planning approval for the measures to ensure coherence, which provides for their earlier implementation. Of course, the project promoters always have the option of voluntarily implementing the measures early at their own cost. If implemented well in advance, in the context of the provisions on intervention, measures for ensuring coherence could have a positive impact on the extent of compensation and replacement measures, since extra costs incurred for temporary functional deficiencies might be reduced.

Public sector project operators and project operators carrying out many or major projects, possibly in step-by-step approval procedures, have the largest scope for action here and therefore bear a special responsibility.

Case B: at the time of the impairment, full functionality of the measures to secure coherence not necessary

The type of habitat or the habitat of the species must not necessarily be fully functional prior to the onset of the considerable impairment. For certain technical reasons, which must be stated comprehensively, a time-lag in functionality is justifiable up to the full effectiveness of the measure and must be compensated for by implementing the measures on a correspondingly larger scale. It is proven that the site's contribution to the Natura 2000 network is also guaranteed in this way.

In these cases too, advance implementation of the measures should be aimed for. Experience gained from implementing other nature conservation instruments allow the conclusion to be drawn that under certain circumstances, time-lags in functionality can be countered by increasing the scale of the measure. This is based among others on the fact that time lags can largely be offset in this way for certain habitat functions.

Based on the time-lag in functionality, larger land additions should be selected, since while the measures (e.g. planting) cannot fulfil the functions adequately at the beginning, a significantly larger stock can nevertheless achieve approximately the same level of compensation overall. The larger scale of the measure also increases prediction security with regard to functional aspects.

Example: By crossing a flowing water body, a road project leads to considerable impairment of the habitat *91EO 'ash-alder woods along running waters'. The loss of the habitat is to be compensated at other sites which are suitable in location and function by measures to ensure coherence; this will be achieved through appropriate planting and restoration of the habitat type. Since other accompanying measures, such as the development of old growth forests in existing similar habitat types are not possible, it is planned to implement the measure on an area many times larger, in order to offset the time-lag in functionality. It is a question here of a habitat type characterised by trees and which has a correspondingly long development time which cannot be accomplished even with an advanced implementation of measures.

Nevertheless, this measure should in principle be recognised as a measure to ensure coherence provided that no specific aspects of the individual case speak against this.

4. LINKS BETWEEN ENVIRONMENTAL ASSESSMENT PROCEDURES: AA, EIA, SEA

4.1. Comparison of procedures under appropriate assessment (AA), EIA and SEA

	AA	EIA	SEA
Which types of developments are targeted?	Any plan or project which – either individually or in combination with other plans/projects – is likely to have a significant effect on a Natura 2000 site (excluding plans or projects directly connected to the conservation management of the site).	All projects listed in Annex I. For projects listed in Annex II the need for an EIA shall be determined on a case-by-case basis or through thresholds or criteria set by Member States (taking into account criteria in Annex III).	All plans and programmes , or amendments thereof, which: <ul style="list-style-type: none"> (a) are subject to preparation and/or adoption by an authority and national, regional and local level; (b) are required by legislative, regulatory or administrative provisions; (c) are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and set the framework for future development consent of projects listed in Annexes I and II to the EIA Directive; or which, in view of the likely effect on sites, have been determined to require an assessment pursuant to Article 6 or 7 of Directive 92/43/EEC.

	AA	EIA	SEA
<i>What impacts need to be assessed relevant to nature?</i>	<p>The assessment should be made in view of the site's conservation objectives (which relate to the species/habitat types significantly present on the site).</p> <p>The impacts should be assessed to determine whether or not they will adversely affect the integrity of the site concerned.</p>	<p>Direct and indirect, secondary, cumulative, transboundary, short, medium and long-term, permanent and temporary, positive and negative significant effects on population and human health; biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC; land, soil, water, air and climate and landscape; material assets, cultural heritage and the landscape; and the interaction between these factors.</p>	<p>Likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.</p>
<i>Who is responsible for the assessment?</i>	<p>It is the responsibility of the competent authority to ensure that the AA is carried out. In that context the developer may be required to carry out all necessary studies and to provide all necessary information to the competent authority in order to enable it to take a fully informed decision. In so doing the competent authority may also collect relevant information from other sources as appropriate.</p>	<p>The developer supplies the necessary information to be duly taken into account, together with the results of consultations, by the competent authority issuing the development consent.</p>	<p>The SEA Directive leaves Member States with a wide margin of discretion in assigning the responsible authorities for SEA. These could either be the authorities in charge of making a plan/programme, the environmental authorities, who are consulted <i>ex lege</i> on the scope and level of detail of the information that must be included in the environmental report, as well as the draft plan/programme and the accompanying environmental report; or the authorities specifically entrusted with running the SEA procedure.</p>
<i>Are the public/other authorities consulted?</i>	<p>The Habitats Directive does not contain an explicit obligation to obtain the opinion of the general public when authorising plans or projects requiring an appropriate assessment. According to the wording of Article 6(3) this has only to be done if it is 'considered appropriate'. However, the Court has clarified that, on the basis of the requirements of the Aarhus Convention, the</p>	<p>Compulsory – consultation before adoption of the development proposal. Member States must take the measures necessary to ensure that the authorities likely to be concerned by the project (including environmental, local and regional authorities) are given an opportunity to express their opinion on the request for development consent. The same principles apply for consulting</p>	<p>Compulsory – consultation before adoption of the plan or programme. Member States must consult the authorities, which by reason of their specific environmental responsibilities are likely to be concerned by the environmental effects of implementing a plan/programme. The public, including the public affected or likely to be affected or having an</p>

	AA	EIA	SEA
	<p>public concerned, including recognised environmental NGOs, has the right to participate in the authorisation procedure (C-243/15 paragraph 49). This right involves in particular, 'the right to participate "effectively during the environmental decision-making" by submitting, "in writing or, as appropriate, at a public hearing or inquiry with the applicant, any comments, information, analyses or opinions that it considers relevant to the proposed activity"' (C-243/15, paragraph 46).</p>	<p>the public concerned. In case of likely significant effects on the environment in another Member State, the relevant authorities and the public in that Member State must be consulted.</p>	<p>interest in, the decision-making, including NGOs, should be consulted. The authorities and the public shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme or its submission to the legislative procedure. In case of likely significant effects on the environment in another Member State, the relevant authorities and the public in that Member State must be consulted.</p>
How binding are the outcomes of the assessment?	<p>Binding. The competent authorities may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site.</p>	<p>The results of the consultations and the information gathered as part of the EIA 'shall be duly taken into account' in the development consent procedure. The decision to grant development consent shall incorporate at least the reasoned conclusion (i.e. the EIA decision) and any environmental conditions attached to the decision.</p>	<p>The environmental report and the opinions expressed 'shall be taken into account' during the preparation of the plan or programme and before its adoption or submission to the legislative procedure.</p>

5. STRATEGIC PLANNING – ASSESSMENT OF PLANS

5.1. Example: Planning of highways in Austria

Highways Planning in Austria – Screening and appropriate assessment

The planning of highways in Austria follows three different project phases, which determine the need of an appropriate assessment iteratively.

Phase 1 ('Voruntersuchung' or 'Korridoruntersuchung') identifies potential conflict-bearing zones within the investigated area, to exclude corridors with intolerable effects and high risk of not being approved, respectively. Special attention is given to protected areas, including Natura 2000 areas. Results of phase 1 are a preliminary selection of possible variations of the project and the investigation programme for phase 2. The requirement of carrying out an appropriate assessment is normally recognized in this stage (screening phase).

Phase 2 ('Vorprojekt' or 'Variantenuntersuchung') identifies the sensitivity of habitats and species in the different possible variations of the project and predicts the possible effects of these on the environment. According to internal national requirements (RVS* ⁽ⁱ⁾) detailed surveys regarding an appropriate assessment are required in this phase. This intends to guarantee the earliest possible consideration of species and habitats under EU protection. At the end of that phase one possible variation of the project is chosen.

Phase 3 ('Einreichprojekt') contains the planning for the approval procedures. The potential effects of the chosen route on the environment are further specified and possible negative effects are mitigated by appropriate measures. The goal is an environmentally responsible, without impacts on site's conservation objectives or protected species and legally approvable project plan.

The advantages of early screening are the timely recognition of necessary legal procedures, in this case of an appropriate assessment or – in other cases – of a derogation procedure. Procedural risks are thus recognized early enough and avoidance strategies can be implemented.

For the localization of potential areas of conflict, the standard data forms of the Natura 2000 sites, together with data from the national atlas of breeding birds, regional and local habitat surveys (as far as they are available and current) are used. The evaluation of the current situation and the possible effects also considers the Red Lists (national or provincial), data from the Article 17 report, national and provincial regulations regarding nationally protected species and other data available in the region. Additional monitoring data can be used where available, e.g. from species conservation projects or LIFE projects implemented in the region.

Source: case study provided by ASFINAG

5.2. Example: Strategic planning of new hydropower developments in the Danube

Strategic planning of new hydropower station in the Danube basin

Guiding Principles on Sustainable Hydropower development in the Danube Basin were developed by the International Commission for the Protection of the Danube River (ICPDR) and were adopted by the Danube countries in June 2013. The guiding principles were drafted as part of a broad participative process involving representatives from energy and environment administrations, the hydropower sector, NGOs and the scientific community.

They recommend a strategic planning approach for the development of new hydropower stations. This approach should be based on a two-level assessment (including lists of recommended criteria), the national/regional assessment followed by the project specific assessment.

⁽ⁱ⁾ RVS=Guidelines and Regulations for the Planning, Construction and Maintenance of Roadways (RVS) www.fsv.at

A first step identifies river stretches where hydropower development is forbidden by national or regional legislation/agreements (exclusion zones). Criteria, which are in place in some European countries for this category include: protected areas, high ecological value stretches, reference stretches, catchment size.

A recommended list for national/regional criteria include the following:

- *Naturalness*. Status of river stretches/water body in relation to the deviation from type-specific natural conditions regarding hydrology, morphology, biological and sediment continuity as well as biological communities.
- *Status of water body with regard to rarity and ecological value*. Rarity of the river type, ecological status of a river stretch and sensitivity.
- *Specific ecological structure and function of the river stretch also with regard to the whole catchment/sub-basin and in relation to ecosystems services*. E.g. particular habitats for sensitive/valuable fish species or other biological quality elements in the riverine ecology (e.g. red list species).
- *Conservation areas and protected sites*. E.g. Natura 2000 areas, Ramsar sites, UNESCO Biosphere Reserves, National, Regional and Nature Parks, etc.

In a second step, all other stretches will be assessed using the assessment matrix and classification scheme.

As many river stretches and floodplains in the Danube basin are protected under the Birds and Habitats Directives, the provisions and requirements according to the management and protection of Natura 2000 sites and the need for an appropriate assessment of impact of possible projects in the concerned areas need to be taken into account.

The national/regional assessment is an instrument to help administrations direct new hydropower stations to those areas where minimum effects on the environment are expected. Danube-basin-wide or trans-border aspects need to be taken into account where appropriate. The national/regional assessment benefits both the environment and water sector but also the hydropower sector since it increases the predictability of the decision-making process and makes transparent where licences for new projects are likely to be issued.

While the assessment at national/regional level is more of a general nature, the project specific assessment classifying the appropriateness of river stretches for potential hydropower use provides a more detailed and in-depth assessment of the benefits and effects of a concrete project. This helps in assessing whether a project is appropriately tailored to a specific location. The project-specific assessment is carried out in response to an application for issuing the licence for a new hydropower plant and therefore depends on the specific project design.

Mitigation measures then have to be set to minimise the negative effects of hydropower installations on aquatic ecosystems. Ensuring fish migration and ecological flows are priority measures for maintaining and improving the ecological status of waters.

Other mitigation measures such as improving sediment management, minimising the negative effects of artificial water level fluctuations (hydropeaking), maintaining groundwater conditions or restoring type specific habitats and riparian zones are important for riverine ecology and wetlands directly depending on aquatic ecosystems. These measures should therefore be considered in the project design, taking into account cost-effectiveness and security of electricity supply.

The guiding principles acknowledge the application of the procedure laid down in Article 6(3) and 6(4) of the Habitats Directive when new hydropower developments might affect Natura 2000 site.

<https://www.icpdr.org/main/activities-projects/hydropower>

5.3. Example: Spatial plan for offshore wind farms and grid connections in the German North Sea EEZ

Spatial Offshore Grid Plan for the German Exclusive Economic Zone of the North Sea

The Offshore Grid Plan defines the offshore wind farms which are suitable for collective grid connections. Along with the stipulation of the necessary cable routes and sites for the offshore wind farms' grid connections, the Offshore Grid Plan contains the cable routes for interconnectors and descriptions of possible cross connections.

Priority areas have been designated for shipping, pipelines, and offshore wind energy production in German EEZ; other uses are prohibited in these areas unless they are compatible. In Natura 2000 sites wind turbines are not allowed. At the transition to the territorial sea and to the crossing of the traffic separation schemes submarine cables for the transport of power generated in the EEZ must be routed along designated cable corridors. With the establishment of the plan a SEA has been carried out.

To minimise possible negative impacts on the marine environment when laying pipelines and cables, the plan states that sensitive habitats should not be crossed during periods of high vulnerability of particular species.

Damage to or destruction of sandbanks, reefs and areas of benthic communities of conservation concern, which constitute particularly sensitive habitats are to be avoided during the laying and operation of pipelines and cables, and best environmental practices according to the OSPAR Convention are to be followed. The plan has also sought to overlap designation for pipeline and wind farm priority areas.

Planning principles such as maximum bundling of cables and avoiding routes through Natura 2000 sites are aimed at reducing the area needed for grid infrastructure and lowering potential impacts on the marine environment. The plan, which was subject to a SEA set out the capacity and expected timing of offshore grid connections to be built over the next 10 years.

https://www.bsh.de/EN/TOPICS/Offshore/Maritime_spatial_planning/maritime_spatial_planning_node.html